

**Iowa Department of Natural Resources
Environmental Protection Commission**

ITEM

9

DECISION

TOPIC

Notice of Intended Action – Chapter 69 – Onsite Wastewater Treatment and Disposal Systems, NPDES General permit #4 and Chapter 64, “Wastewater Construction and Operation Permits”.

The Commission is requested to approve the proposed amendments to Chapter 69, “Onsite Wastewater Treatment and Disposal Systems”. The attached summary of changes to Chapter 69 outline the addition of a time of transfer section as required by Senate File 261, the addition of new technologies and changes to reflect the latest research and experience with onsite systems in Iowa. Changes also include the renewal of NPDES General Permit #4 for discharging onsite systems.

The following is a summary of the proposed amendments to the rules:

- Title changed to “Private Sewage Disposal Systems” to match Iowa Code
- Changes and additions to definitions
- Addition of a time of transfer inspection section
- Addition of final inspection requirement and database tracking
- Changes to the requirements for discharging systems and NPDES permitting
- Changes to septic tank sizing and configuration
- Addition of soil loading rates to absorption system sizing
- Addition of requirements for grease traps, tank abandonment, pump vaults, at-grade soil systems, EPS aggregate, peat filters and textile filters.
- Removal of some applications of free access sand filters and waste stabilization ponds.
- Additional requirements for aerobic treatment units.
- General permit 4 will change to include only those discharging onsite systems that pose a substantial risk to water quality.

IAC 567-Chapter 64.15 will change to reflect the change in effective dates of the NPDES General Permit #4.

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NPDES Section, Water Quality Bureau
Environmental Services Division

September 19, 2008

ENVIRONMENTAL PROTECTION COMMISSION [567]

Notice of Intended Action

Pursuant to the authority of Iowa Code sections 455B.173 and 455B.197, the Environmental Protection Commission hereby gives Notice of Intended Action to amend Chapter 69, "Onsite Wastewater Treatment and Disposal Systems" and Chapter 64, "Wastewater Construction and Operation Permits", Iowa Administrative Code.

Pursuant to Iowa Code section 455B.173(3), the Commission is required to establish, modify, or repeal rules relating to the location, construction, operation, and maintenance of disposal systems.

In addition, section 455B.173 (11) requires the Commission to adopt rules for the issuance of a single general permit, after notice and opportunity for a public hearing. The single general permit shall cover numerous facilities to the extent that they are representative of a class of facilities which can be identified and conditioned by a single permit. The proposed rules will fulfill the Commission's and the department's requirements pursuant to section 455B.173(3) and 455B.173(11).

Any person may submit written suggestions or comments on the proposed amendments through December 5, 2008. Such written material should be submitted to Daniel Olson, NPDES Section, Iowa Department of Natural Resources, 502 East 9th Street, Des Moines, Iowa 50319-0034, fax (515) 281-8895, or by email to Daniel.olson@dnr.iowa.gov. Persons who have questions may contact Daniel Olson by email or at (515) 281-8263.

Public hearings where persons may present their views orally or in writing will be held at the following dates and times:

Tuesday, December 2, 2008, 1:30 - 4:30 p.m.

South Conference Room, IDNR, 401 SW 7th St., Ste. M, Des Moines, Iowa 50309

Wednesday, December 3, 2008, 1-3pm

Room B, Iowa City Public Library, 123 South Linn Street, Iowa City, Iowa 52240

Thursday, December 4, 2008, 1-3pm

Meeting Room, Fort Dodge Public Library, 424 Central Ave., Fort Dodge, Iowa 50501

At the hearings, persons will be asked to give their names and addresses for the record and to confine their remarks to the subjects of the amendments. Any person who intends to attend the public hearings and has special requirements such as those related to mobility or hearing impairments should contact the Iowa Department of Natural Resources to advise of any specific needs.

These rules are intended to implement Iowa Code Chapter 455B, Division III, Part I.

The following summary describes the significant changes that are proposed for Chapter 69. It does not detail each of the proposed changes, but highlights the changes that will have the most impact on onsite wastewater treatment systems and the State of Iowa.

Chapter 69

The proposed amendments to Chapter 69 begin with a title change to be consistent with Iowa Code 455B. Several definitions have also been changed to be consistent with Iowa Code 455B. Definitions were added for new technologies. Definitions were removed for items repeated in NPDES General Permit #4 as well as a definition not used in Chapter 69.

Several terminology changes are made to be consistent with the latest national onsite wastewater standards, the Consortium for Decentralized Wastewater Treatment's glossary of terms and other Iowa Administrative Code rules.

Sections have been added for tank abandonment, grease traps and permits by rule. The permit by rule is intended to act as an operation permit for discharging systems that do not require the General Permit #4. The largest section added is the time of transfer section. These rules are needed to implement Senate File 261 which modified Iowa Code 455B to require homes with septic systems to have those septic systems inspected prior to finalizing the sale. SF261 also required the establishment of a certified time of transfer inspector program. These are included in this new section.

New sections have also been added that require a final inspection on a new system installation and require the counties to enter basic information about that system in the state onsite wastewater database system. Additional new sections include technologies that have been in use but are not included in the current rules. They include peat filters, textile filters, expanded polystyrene aggregate, filtered pump vaults and at-grade soil absorption systems. These are all proven technologies in Iowa and nationally. The peat and textile filters will include maintenance requirements since they are normally discharging systems.

The requirements for NPDES General Permit # 4 will change. Systems that discharge to designated waters of the state will still require a permit with increased effluent testing and monitoring. Discharging systems that do not discharge to designated waters of the state and the effluent from these systems is not expected to reach designated waters of the state will not require a General Permit #4. However, these systems will require annual inspection and recordkeeping. The records of the inspections and /or maintenance must be provided to the Administrative Authority upon request. This requirement applies to all discharging systems. The permit requirements have been removed from the body of Chapter 69. Discharging system sections refer to the General Permit for testing and maintenance requirements. A separate rationale for General Permit #4 is included with this rule package.

Septic tank sizing and lid configuration have been changed. The sizing will increase each tank size by 250 gallons but remove the requirement to add size for high water use appliances. The minimum tank size will be 1250 gallons. Most septic tank sizings in the field will not be affected by this change. Effluent screens will be required in the outlet of septic tanks. These devices prevent suspended solids from leaving the tank and fouling the secondary treatment system. Since effluent screens require regular maintenance, the configuration of openings on the septic tank lid will change to facilitate cleaning the screens. Another addition to make maintenance easier is a requirement for risers on septic tanks to come to the ground surface. This will encourage pumping and maintenance of septic tanks. Tanks and risers will also be required to be watertight.

Soils absorption systems sizing charts will now include the ability to size systems based on soil loading rates determined from soil analysis. Soil analysis is now the

recommended method for determining a soils capability to accept water. Percolation tests will still be permitted but must be correlated to a soil loading rate for sizing. This is an educational attempt to slowly move towards soil analysis alone in the future. Additional charts have been added to correlate percolation test results and soil loading rates. Sizing charts are given for two and three foot wide trenches. The various trench technologies are sized accordingly based upon trench bottom square footage. This is the nationally accepted method for soil absorption systems.

The use of free access sand filter following a septic tank has been removed. These filters are sized considerably smaller than buried sand filter based upon their ability to be raked and maintained. In practice we have found these systems do not receive the maintenance needed. Buried sand filters are preferred and can be installed in most cases where a free access sand filter was proposed. There are also other alternatives to free access sand filters. The use of free access sand filters will still be permitted after an aerobic treatment unit since the effluent is of better quality.

The use of waste stabilization ponds for single family homes has also been removed. The majority of these systems installed are not installed according to code requirements and therefore do not protect groundwater or the environment. Their use will still be permitted for commercial establishments provided the system is designed by an engineer. It is felt that they will be better constructed and maintained in these cases. Chemical toilets have been removed. These systems are rarely used in Iowa.

Aerobic treatment units will now be required to have a 500 gallon trash tank precede them if one is not already incorporated in the design. They must be followed by a free access sand filter or other system at a size prescribed in these rules. These units are maintenance intensive and these changes are needed to ensure they do not discharge poor quality effluent between service visits or when abused.

Chapter 64

IAC567-Chapter 64.15 will change to reflect the new effective dates of the General Permit #4.

The following amendments to Chapter 69 are proposed:

ITEM 1. Amend the title of **IAC567 - 69(455B)** and all references to the title throughout the chapter as follows:

CHAPTER 69 **~~ONSITE WASTEWATER TREATMENT AND~~ PRIVATE SEWAGE DISPOSAL** **SYSTEMS**

ITEM 2. Amend rule **567 - 69.1(455B)** as follows:

Adopt the following **new** definitions in alphabetical order:

“Domestic sewage” or “domestic wastewater” means the water carried waste products from residences, public buildings, institutions, or other buildings, including bodily discharges from human beings together with groundwater infiltration and surface water as may be present.

“Expanded Polystyrene (EPS) Aggregate Systems”. Cylinders comprised of expanded polystyrene (EPS) synthetic aggregate contained in high strength polyethylene netting. Cylinders may vary in diameter and are produced both with and without a distribution pipe. Cylinders may be configured in a trench, bed, at-grade and mound

applications to obtain the desired width, height and length. All cylinders contain a geotextile barrier fabric prefabricated between the aggregate and netting that spans across the top of the EPS. Cylinders containing a distribution pipe shall be connected end to end with an internal coupling device.

“Grease interceptor” a watertight device designed to intercept and retain or remove grease and/or fatty substances. The device may be located inside (grease separator) or outside (grease tank or grease trap) of a facility.

“Packed Bed Media Filter” A watertight structure filled with uniformly sized media that is normally placed over an under drain system. The wastewater is dosed onto the surface of the media through a distribution network and is allowed to percolate through the media to the under drain system. The under drain collects the filtrate and discharges the final effluent.

“Pre-treated effluent” is septic tank effluent treated through aeration or other methods that, upon laboratory analysis, meets or exceeds a monthly average for biochemical oxygen demand (BOD) of 30mg/L and total suspended solids (TSS) of 30mg/L.

“Sewage sludge” means any solid, semisolid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. "Sewage sludge" includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum septage, portable toilet pumpings, type III marine device pumpings as defined in 33 C.F.R. part 159, and sewage sludge products. "Sewage sludge" does not include grit, screenings, or ash generated during the incineration of sewage sludge.

ITEM 3. Amend **567-69.1 (455B)**, definitions of “administrative authority”, “individual mechanical aerobic wastewater treatment system”, “building sewer”, “conventional”, “drop box”, “gravel”, gravelless pipe system”, “mound system”, “pond”, “onsite wastewater treatment and disposal system”, “professional soil analysis”, “qualified sampler”, “secondary treatment system”, “septage”, “stream”, and “subsurface absorption system” as follows :

“Administrative authority” is the department and the local board of health as authorized by Iowa Code section 455B.172 and 567—Chapter 137137.

“Aerobic treatment unit ~~Individual mechanical aerobic wastewater treatment system~~” means an individual wastewater treatment and a disposal system employing bacterial action which is maintained by the utilization of air or oxygen and includes the aeration plant and equipment and the method of final effluent disposal.

“Building sewer” is that part of the horizontal piping from the building wall to its connection with the main sewer or the primary treatment portion of a ~~onsite wastewater treatment and private sewage~~ disposal system conveying the drainage of ~~one~~ a building site.

“Conventional” when used in reference to sewage treatment means a soil absorption system involving a series of two to three foot wide ~~two foot wide~~ trenches filled with gravel one foot deep, containing a four-inch diameter rigid pipe or other alternative trench technologies to convey the sewage effluent.

“Drop box” is a structure to divert wastewater flow into a soil absorption trench until the trench is filled to a set level, then allow any additional wastewater, which is not absorbed by that trench, to flow to the next drop box or soil absorption trench.

“Gravel” means stone screened from river sand or quarried and washed free of clay and clay coatings. Concrete aggregate designated as Class II by the department of transportation is acceptable.

“Gravelless pipe system” means a soil absorption system comprised of 10” large diameter corrugated plastic pipe, perforated with holes on a 120-degree arc centered on the bottom, wrapped in a sheath of geotextile filter wrap and installed level in a trench without gravel bedding or cover.

“Mound system” is an alternative above ground soil absorption system used to ~~absorb~~ disperse effluent from septic tanks in cases where either a seasonally high water table, high bedrock conditions, slowly permeable soils or limited land areas prevent conventional subsurface soil absorption systems.

“Pond” means a natural or man-made impoundment of water with a water surface area of one acre or less at the high water level.

~~“Onsite wastewater treatment and disposal system” means all equipment and devices necessary for proper conduction, collection, storage, treatment, and disposal of wastewater from four or fewer dwelling units or the equivalent of less than sixteen individuals on a continuing basis. other facility serving the equivalent of 15 persons (1,500 gpd) or less. Included within the scope of this definition are building sewers, septic tanks, subsurface absorption systems, mound systems, sand filters, constructed wetlands and individual mechanical/aerobic wastewater treatment systems.~~

“Private sewage disposal system” means a system which provides for the treatment or disposal of domestic sewage from four or fewer dwelling units or the equivalent of less than sixteen individuals on a continuing basis. This includes domestic waste whether residential or nonresidential but does not include industrial waste of any flow rate.

“Professional soil analysis” is an alternative to the percolation test which depends upon a knowledgeable person evaluating the soil ~~factors~~ characteristics, such as color, texture, and structure, in order to determine an equivalent percolation or loading rate. Demonstrated training and experience in soil morphology such as testing absorption qualities of soil by the physical examination of the soil’s color, mottling, texture, structure, topography and hillslope position shall be required to perform a professional soil analysis.

“Qualified sampler,” for the purposes of collecting compliance effluent samples required under NPDES General Permit No. 4, means one of the following persons: ~~a DNR staff person~~, a city or county environmental health staff person, an Iowa-certified wastewater treatment operator, or an individual who has received training approved by the department to conduct effluent sampling.

“Secondary treatment system” is a system which provides biological treatment of the effluent from septic tanks or other primary treatment units to meet minimum effluent standards as required in these rules and NPDES General Permit No. 4. Examples include soil absorption systems, ~~sand~~ media filters, aerobic ~~systems~~ treatment units, or other systems providing equivalent treatment.

“Septage” ~~means the liquid contents (including sludge and scum) of a septic tank normally pumped out periodically and transported to another site for disposal.~~ means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or from a holding tank, when the system is cleaned or maintained.

“Stream” means any watercourse listed as being a “designated use segment” in rule 567—61.3(455B) which includes any watercourse which maintains flow throughout the year or contains sufficient pooled areas during intermittent flow periods to maintain a viable aquatic community ~~of significance~~.

“Subsurface soil absorption system” is a system of perforated conduits connected to a distribution system, forming a series of subsurface, water-carrying channels into which the primary treated effluent is discharged for direct absorption into the soil (referred to as part of the open portion of the treatment system).

ITEM 4. Rescind the definitions of “Carbonaceous biochemical oxygen demand”, “Class A1 water”, “Class A2 water”, “Class A3 water”, “Sewage wastewater”, “Sludge” and “Wastewater management district” in 567-69.1 (455B).

ITEM 5. Amend subrule 567-69.1(3) as follows:

69.1(3) General regulations.

a. Connections to approved sewer system.

(1) No ~~onsite wastewater treatment and private sewage disposal~~ system shall be installed, repaired, or rehabilitated where a sanitary sewer publicly owned treatment works (POTW) is available or where a local ordinance requires connection to a public system POTW. The ~~public sewer POTW~~ may be considered as not available when such public sewer POTW, or any building or any exterior drainage facility connected thereto, is located more than 200 feet from any proposed building or exterior drainage facility on any lot or premises which abuts and is served by such public sewer POTW. Final determination of availability shall be made by the administrative authority.

(2) When a public sanitary sewer POTW becomes available within 200 feet, any building then served by a ~~onsite wastewater treatment and private sewage disposal~~ system shall be connected to said public sanitary sewer POTW within a time frame or under conditions set by the administrative authority.

(3) When a public sanitary sewer POTW is not available, every building wherein persons reside, congregate or are employed shall be provided with an approved ~~onsite wastewater treatment and private sewage disposal~~ system.

(4) If a building is to be connected to an existing ~~onsite wastewater treatment and private sewage disposal~~ system, that existing system shall meet the standards of these rules and be appropriately sized.

b. Discharge restrictions. It is prohibited to discharge any wastewater from ~~onsite wastewater treatment and private sewage disposal~~ systems (except as permitted in this chapter) to any ditch, stream, pond, lake, natural or artificial waterway, county drain tile, surface water drain tile, land drain tile, to the groundwater or to the surface of the ground. Under no conditions shall effluent from ~~onsite wastewater treatment and private sewage disposal~~ systems be discharged to any abandoned well, agricultural drainage well or sinkhole. Existing discharges to any of the above-listed locations or structures shall be eliminated by constructing a system which is in compliance with the requirements of these rules.

c. Construction or alteration. All ~~onsite wastewater treatment and private sewage disposal~~ systems constructed or altered after the effective date of these rules (~~May 13, 1998~~) shall comply with these requirements. Alteration includes any changes that effect the treatment or disposal of the waste. Repair of existing components that does not

change the treatment or disposal would be exempt. However, the discharge restrictions in “b” above would always apply.

ITEM 6. Adopt **new** paragraph 567-69.1(3)“d” as follows:

d. Abandonment. Private sewage disposal systems that are abandoned shall have the septic tank pumped, the tank lid shall be crushed into the tank and the tank shall be filled with sand or soil.

ITEM 7. Amend subrule 567-69.1(4) as follows:

69.1(4) Construction Permit required. No ~~onsite wastewater treatment and private sewage disposal~~ system shall be installed or altered as described in 69.1(3)“c,” ~~until an application for a permit has been submitted and a permit has been~~ without obtaining a construction permit issued by the administrative authority. The installation shall be in accordance with these rules.

ITEM 8. Adopt **new** subrule 567-69.1(5) as follows:

69.1(5) Permit by rule. This chapter is intended to act as a permit by rule for private sewage disposal systems. Activities in compliance with this chapter are permitted by the director for purposes of compliance with sections 455B.183 and 455B.186 of the Code of Iowa.

ITEM 9. Renumber rule 567-69.2(455B) through 567-69.22(455B)

ITEM 10. Adopt **new** renumbered rule 567-69.2(455B) as follows:

567 - 69.2(455B) Time of transfer inspections.

69.2(1) Inspections required. Prior to any transfer of ownership of a building where a person resides, congregates, or is employed that is served by a private sewage disposal system, the sewage disposal system serving the building shall be inspected. A building that will be demolished without being occupied does not require an inspection. A legally binding document verifying that the building will be demolished shall be provided to the county and to the department for record. In the event that weather or other temporary physical conditions prevent the certified inspection from being conducted, the buyer shall execute and submit a binding acknowledgment with the county board of health to conduct a certified inspection of the private sewage disposal system at the earliest practicable time and to be responsible for any required modifications to the private sewage disposal system as identified by the certified inspection. Title abstracts to property with private sewage disposal systems shall include documentation of the requirements in this subsection.

a. Inspection criteria. If a private sewage disposal system is failing to ensure effective wastewater treatment or is otherwise improperly functioning, the private sewage disposal system shall be renovated to meet current construction standards, as adopted by the department, either by the seller or, by agreement, within a reasonable time period as determined by the county or the department, by the buyer. If the private sewage disposal system is properly treating the wastewater and not creating an unsanitary condition in the environment at the time of inspection, the system is not required to meet current construction standards.

b. Inspection validity. An inspection is valid for a period of two years for any ownership transfers during that period.

69.2(2) Certified Inspectors. Inspections shall be conducted by an inspector certified by the department. In order to be certified as a certified time of transfer inspector, an applicant shall have met the experience requirements, successfully completed the inspection course and examination and been issued a current certificate by the department in accordance with these rules.

a. Experience requirements. In order to be certified by taking the inspection course and test only, an individual must have at least 2 years experience in the operation, installation, inspection, design or maintenance of private sewage disposal systems. Individuals lacking this experience will be required to take additional coursework before attending the inspection course with testing. These courses shall include, but not be limited to, “Onsite Basics 101” and “Alternative Systems” offered by the Onsite Wastewater Training Center of Iowa or courses determined to be equivalent by the Department.

b. Examination application. A person wishing to take the examination required to become a certified time of transfer inspector shall complete the Time of Transfer Inspection Certification Examination Application, Form XXXXX. A listing of dates and locations of examinations is available from the department upon request. The application form requires the applicant to indicate pertinent educational background, training and past experience in providing private sewage disposal services. The completed application and the application fee shall be sent to Time of Transfer Inspection Certification, Iowa Department of Natural Resources, 502 E. 9th St., Des Moines, IA 50319-0034. Application for examination must be received by the department at least 60 days prior to the date of the examination.

c. Application evaluation. The director may designate department personnel and/or an experience review committee to evaluate all applications for examination. A notification with the review decision will be sent to the applicants prior to the examination dates. The applicant shall have the right to dispute the application evaluation.

d. Certification. Applicants who successfully meet the department’s requirements will receive a written certification from the department. The department shall maintain a current listing of certified time of transfer inspectors. The list shall be available on the department’s website and be provided to county boards of health or other interested parties.

e. Fees. The following fees for time of transfer inspectors are nonrefundable:

(1) Examination fee. The examination fee for each examination shall be \$50.

(2) Certification fees. The certification fee for time of transfer inspectors shall be \$75 for each one-half year of a two-year period from the date of issuance to June 30 of the next even-numbered year.

(3) Certification renewal fees. The certification renewal fee for certified time of transfer inspectors shall be \$300 for the two-year period.

(4) Penalty fee. The penalty fee shall be \$100 for each 30 days in delinquency. The penalty fee is for late payment of the initial certification fee or renewal fee or for incomplete application forms.

f. Renewal period. All certificates shall expire on June 30 of even-numbered years and must be renewed every two years in order to maintain certification.

69.2(3) Continuing education units requirement.

a. CEU requirements. Continuing education units must be earned during two-year periods between July 1 and June 30 of even-numbered years. A certified time of transfer inspector must earn 1.2 units or 12 contact hours during each two-year period.

b. CEU approval. All activities for which continuing education units credit will be granted must be approved by an accredited college or university, an issuing agency, or by the department, and shall be related to private sewage disposal systems.

c. CEU reporting. It is the certified time of transfer inspectors personal responsibility to maintain a written record and to notify the department of the continuing education credit earned during the period. The continuing education credits earned during the period shall be shown on the application for renewal.

69.2(4) Certificate renewal.

a. Certification period. All certificates shall expire on June 30 of even-numbered years and must be renewed every two years in order to stay effective.

b. Application for renewal. Renewal applications shall be submitted on DNR form 542-XXXX 60 days before the expiration date of the current certificate. Late applications or incomplete applications may lead to revocation of the certificate. Renewal of certificates will only be granted to inspectors in good standing.

c. CEU's. Only those certified time of transfer inspectors fulfilling the continuing education requirements before the end of each two-year period (June 30) will be allowed to renew their certificates. The certificates of certified time of transfer inspectors not fulfilling the continuing education requirements shall expire on June 30 of every even-numbered year.

d. Fees: Renewal fees in the amount of \$300 must accompany the renewal application in order to renew the certificate. Failure to submit the renewal fee on time may lead to the revocation of the certificate.

69.2(5) Obligations of the certified time of transfer inspectors.

a. Certified time of transfer inspectors shall conduct time of transfer inspections according to these rules.

b. Following an inspection, the inspection form and any related reports shall be provided to the county environmental health department for enforcement of any follow-up mandatory system improvement, to the department for record and to the county recorder's office.

69.2(6) Disciplinary actions.

a. Grounds for disciplinary action. Disciplinary action may be taken against a certified time of transfer inspector on any of the grounds specified in Iowa Code section 455B.109A and the following more specific grounds: (Iowa Code section 455B.109 authorizes the assessment of administrative penalties for violations of Iowa Code chapter 455B or rules, permits, and orders promulgated or issued pursuant to Iowa Code chapter 455B. The department will follow the provisions of 567—Chapter 10 for assessing such penalties.)

(1) Knowingly making any false statement, representation, or certification on any application

record, report or document required to be maintained or submitted under any applicable inspection or rule of the department.

(2) Conducting time of transfer inspections after a certificate has expired.

(3) Failure to renew certification on time.

- (4) Failure to obtain required continuing education units.
 - (5) Failure to submit, within the time required, complete inspection records or reports.
 - (6) Failure to use reasonable care or judgment or to apply knowledge or ability in performing the duties of a certified time of transfer inspector.
 - (7) Violation of private sewage disposal, or commercial septic tank cleaner rules or other requirements contained in 567—Chapters 68 and 69.
 - (8) Failure to advise a person for whom a time of transfer inspection is being provided that a hazardous or potentially hazardous condition, as defined in Iowa Code section 455B.381(2), has been encountered.
 - (9) Knowingly causing or allowing a hazardous or potentially hazardous condition due to a private sewage disposal systems construction to exist.
 - (10) Failure to document and record a private sewage disposal system is not working effectively.
 - (11) Installing or modifying a private sewage disposal system without a construction permit.
- b. Disciplinary sanctions allowable are:
- (1) Revocation of a certificate. Revocation of a certificate may be permanent without chance of recertification or it may be for a specified period of time, depending upon the gravity of the infraction.
 - (2) Partial revocation or suspension. Revocation or suspension of the practice of a particular aspect of the contractor's obligation.
 - (3) Probation. Probation under specified conditions relevant to the specific grounds for disciplinary action. Additional education or training or reexamination may be required as a condition of probation. Reexamination may include written and oral examinations.
 - (4) Fees. The department shall determine which fees in rule 69.2(2)e(455B) apply.
- c. Procedure.
- (1) The director shall initiate disciplinary action. The director may investigate any alleged factual situation that may be grounds for disciplinary action under subrule 69.2(6) and report the results of the investigation to the commission.
 - (2) The director may issue an administrative order that may assess a penalty or refer a case to the attorney general for prosecution for any disciplinary action.
 - (3) Written notice by certified mail shall be provided to a certified time of transfer inspector against whom disciplinary action is being considered. The certified time of transfer inspector will be given 20 days' advance notice that an informal hearing has been scheduled before the commission. The notice will provide the specific date, time, and place, at which time the commission will hold the informal hearing to determine whether a formal hearing is warranted or whether informal resolution can be reached. The certified time of transfer inspector may present any relevant facts and indicate his/her position in the matter.
 - (4) A certified time of transfer inspector who receives notice of an informal hearing shall communicate orally or in writing with the director, and efforts shall be made to clarify the respective positions of the certified time of transfer inspector and the director's designee. The director's designee may present a recommendation concerning disciplinary sanctions to the commission at the informal hearing.

(5) Failure to attend the informal hearing or otherwise to communicate facts and position relevant to the matter by the scheduled date will be considered by the commission when determining whether a formal hearing is warranted.

(6) If agreement as to appropriate disciplinary sanction, if any, can be reached with the certified time of transfer inspector and the commission concurs, a written stipulation and settlement between the department and the certified time of transfer inspector shall be entered. The stipulation and settlement shall recite the basic facts and violations alleged, any facts presented by the certified time of transfer inspector and the reasons for the particular sanctions imposed.

(7) If the commission determines that no disciplinary action is warranted on the facts asserted, the certified time of transfer inspector shall be notified of the decision in writing.

(8) If the commission determines that an opportunity for formal hearing is required to impose any disciplinary sanction specified in subrule 69.2(6)b, the director shall proceed in accordance with 567—Chapter 7.

69.2(7) Recertification after revocation. Upon revocation of a certificate in accordance with subrule 69.2(6)b(2), application for certification may be allowed after two years from the date of revocation. Any such applicant must pass an examination and be certified in the same manner as other applicants. The department shall require the applicant to take and pass a written and oral examination in order to become recertified. The department will decide which fees in rule 69.2(2)e (455B) will apply.

69.2(8) Inspection Procedures

Time of transfer (or real estate) inspections shall be conducted as follows:

a. Inspection form. The inspection shall be conducted using DNR FormXXXX, “Time of Transfer Inspection Report”.

b. Record search. Prior to an inspection the inspector shall contact the administrative authority to obtain any permits, as-built drawings or other information that may be available concerning the system being inspected. Information may also be obtained from service providers or the homeowner. If an as-built drawing is available, the system inspection shall verify that drawing. If no as-built drawing is available, the inspector shall develop an as-built drawing as part of the inspection.

c. Septic tank. At the time of inspection, any septic tank(s) existing as part of the sewage disposal system shall be opened and have the contents pumped out and disposed of according to IAC 567 –Chapter 68. In the alternative, the owner may provide evidence of the septic tank being properly pumped out within three years prior to the inspection by a commercial septic tank cleaner licensed by the department which shall include documentation of the size and condition of the tank and its components at the time of such occurrence. If the septic tank(s) is opened, the condition of the tank and its components shall be documented and included in the final report.

d. Pumps and pump chambers. Pump chambers or vaults shall be opened for inspection and the pump shall be tested to ensure proper operation.

e. Secondary treatment. Proof that a secondary treatment system is in place must be provided. This proof may include, but is not limited to:

(1) Opening a distribution box or uncovering a header pipe for a soil absorption system. Existing distribution boxes shall be opened for inspection.

(2) Verification of the existence of a sand filter by locating the vents and discharge pipe.

(3) Locating and opening the lid(s) of an advanced treatment unit.

(4) Absorption fields shall be probed to determine their condition. The condition of the fields shall be noted on the inspection report. The condition of the absorption field may also be determined with a hydraulic loading test.

f. Discharging systems. An effluent test shall be performed on any legally discharging private sewage disposal system. The effluent test results shall meet the requirements of the NPDES General Permit No. 4 and be included in the inspection report.

(1) The certified time of transfer inspector shall ensure that a legally discharging private sewage disposal system has a NPDES General Permit No. 4, if applicable, or ensure that a Notice of Intent to discharge is submitted to the department for coverage under the NPDES General Permit No. 4.

g. Packaged treatment units. An advanced treatment unit such as an aerobic treatment unit, textile filter, peat filter or fixed activated sludge treatment system shall be inspected according to manufacturer's recommendations.

h. Other systems and system components. Private sewage disposal systems not mentioned above shall be inspected for code compliance and an effluent sample shall be taken if applicable. Any components of the private sewage disposal system not mentioned above shall be inspected for proper function. Examples of other components may include, but not be limited to, effluent screens, tertiary treatment systems, disinfection devices, alarms, control boxes and timers.

i. Inspection reports. Following an inspection, the inspection form and a narrative report describing the condition of the private sewage disposal system at the time of the inspection shall be provided to the county, to the department for record and to the county Recorder in the county where the inspection occurred.

ITEM 11. Adopt **new** paragraphs 69.3(1)b and 69.3(1)c as follows:

b. Final inspections.

All newly constructed private sewage disposal systems shall be inspected by the administrative authority prior to backfilling of the system or at a time prescribed by the administrative authority. A final as-built drawing shall be made as part of the final inspection.

c. Onsite wastewater tracking system. All pertinent information, including but not limited to; private sewage disposal system location address, owner, type of system, date of installation and the as-built drawing, shall be entered into the Department's web-based Onsite Wastewater Tracking System.

ITEM 12. Amend subrule 69.3(2) as follows:

69.3(2) Minimum distances. ~~All onsite wastewater treatment and private sewage disposal systems shall be located in accordance with the minimum distances shown in Table I.~~

TABLE I

Minimum Distance in Feet From	Closed Portion of Treatment System ⁽¹⁾	Open Portion of Treatment System ⁽²⁾
Private water supply well	50	100
Public water supply well	200	200

Groundwater heat pump borehole	50	100
Lake or reservoir	50	100
Stream or pond	25	25
Edge of drainage ditch	10	10
Dwelling or other structure	10	10
Property lines (unless a mutual easement is signed and recorded)	10	10
Other type subsurface treatment system	5	10
Water lines continually under pressure	10	10
Suction water lines	50	100
Foundation drains or subsurface tiles	10	10

(¹) Includes septic tanks, ~~mechanical aeration tanks~~ aerobic treatment units, fully contained media filters and impervious vault toilets.

(²) Includes subsurface absorption systems, mound systems, intermittent sand filters, constructed wetlands, open bottom media filters or waste stabilization ponds.

ITEM 13. Amend rule 69.4 as follows:

567—69.4(455B) Requirements when effluent is discharged into surface water. All discharges from ~~onsite wastewater treatment and private sewage disposal~~ systems which are discharged into any ~~surface water, to the surface of the ground, or into a subsurface drainage tile that discharges to a surface water~~ designated waters of the state shall be treated in a manner that will conform with the requirements of NPDES General Permit No. 4 issued by the department of natural resources, as referenced in 567—Chapter 64. Prior to the ~~installation~~ use of any system discharging to designated waters of the state, a notice of intent to be covered by NPDES General Permit No. 4 shall be submitted to the department. Systems covered by this permit must meet all applicable requirements listed in the NPDES permit, including effluent sampling and monitoring.

ITEM 14. Adopt new rule 567-69.5(455B) as follows:

567—69.5(455B) Requirements when effluent discharges above the ground surface.

(1) All private sewage disposal systems that discharge above the ground surface shall be annually inspected to ensure proper operation.

(2) Private sewage disposal systems that require maintenance contracts shall be inspected by a manufacturer's certified technician or person demonstrating knowledge of the system in accordance with the manufacturer's standards.

(3) Private sewage disposal systems not requiring a maintenance contract shall be visually inspected by a person with knowledge of the system for any malfunction and shall have the septic tank opened, inspected and pumped if needed. A record of the inspection and any tank pumping shall be maintain and be made available to the administrative authority upon request.

ITEM 15. Amend rule 69.7 by adopting the new paragraph (4) as follows:

69.7(4) Grease interceptors.

a. Applicability. Grease interceptors shall be provided for kitchen flows at restaurants, nursing homes, schools, hospitals and other facilities from which grease can be expected to be discharged.

b. Installation. Grease interceptors shall be installed on a separate building sewer serving kitchen flows into which the grease will be discharged. The discharge from the grease trap must flow to a properly designed septic tank or to a building sewer prior to the septic tank.

ITEM 16. Amend paragraph 69.8(1), “a” as follows:

a. Septic tank required. Every ~~onsite wastewater treatment and private sewage disposal system, except mechanical-aerobic systems,~~ shall have as a primary treatment unit a septic tank as described in this rule. All wastewater from the facility serviced shall discharge into the septic tank (except as noted in “d” below).

ITEM 17. Amend subrule 69.8(2) as follows:

a. Minimum capacity. The minimum liquid holding capacity shall be as specified in the following table (capacity may be obtained by using one or more tanks):

up to and including 3-bedroom homes	1,000 <u>1,250</u> gal.
4-bedroom homes	1,250 <u>1,500</u> gal.
5-bedroom homes	1,500 <u>1,750</u> gal.
6-bedroom homes	1,750 <u>2,000</u> gal.

~~Two hundred fifty gallons of capacity shall be added to each of these tank volumes if a kitchen garbage disposal unit, water softener, or a high volume water use fixture such as a whirlpool bath is to be used.~~

b. Other domestic waste systems. In the event that an installation serves more than a 6-bedroom home or its equivalent, or serves a facility other than a house and serves ~~the equivalent of 15 persons or less (1,500 gal/day)~~ the equivalent of less than sixteen individuals on a continuing basis, approval of septic tank capacity and design must be obtained from the administrative authority. Minimum septic tank liquid holding volume shall be two times the estimated daily sewage flow.

c. For wastewater flow rates for nonresidential and commercial domestic waste applications under 1,500 gal/day, serving the equivalent of less than sixteen individuals on a continuing basis. refer to Appendix A.

ITEM 18. Amend paragraph 69.8(3), “d” as follows:

d. Baffles. Four-inch diameter schedule 40 plastic pipe tees shall be used as inlet and outlet baffles. Inlet tees shall extend at least 6 inches above and 8 inches below the liquid level of the tank. The inlet tee shall extend below the liquid level no more than 20 percent of the liquid depth. The outlet tee shall extend above the liquid level a distance of at least 6 inches and below the liquid level a distance of at least ~~10-15~~ inches but no more than ~~25~~ 30 percent of the liquid depth. A minimum clearance between the top of the inlet and outlet tees and the bottom of the tank lid of 2 inches shall be provided. A horizontal separation of at least 36 inches shall be provided between the inlet baffle and the outlet baffle in each compartment. Outlet baffles shall be fitted with an effluent screen. All effluent screens shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 46, including appendices or other

equivalent testing as determined by the department. Effluent screens require periodic inspection and cleaning to ensure their continued proper operation.

ITEM 19. Amend paragraph 69.8(3), “e” as follows:

e. Access. Access must be provided to all parts of septic tanks necessary for adequate inspection, operation, and maintenance.

An access opening shall be provided at each end of the tank over the inlet and outlet. These openings shall be at least 18 inches in the smallest dimension. ~~if the tank has no other openings. Alternatively, a single opening at least 24 inches in diameter may be provided at the center of the tank allowing access to both compartments, with two smaller openings at least 6 inches in diameter over both inlet and outlet.~~

~~If the top of the tank is to be greater than 12 inches below the finished ground surface, a riser at least 24 inches in diameter must be installed over each manhole of 18 inches in diameter or more to bring the top of the manhole lid to within 6 inches of the finished ground surface. Watertight risers shall be installed to bring the access openings to the ground surface. Risers shall be secured using stainless steel fasteners of sufficient complexity, locking devices, concrete lids of sufficient weight or other device approved by the administrative authority to deter tampering.~~

ITEM 20. Amend paragraph 69.8(4), “a” as follows:

a. Materials. Tanks shall be constructed of watertight poured concrete, fiberglass or plastic resistant to corrosion or decay and designed so that they will not collapse or rupture when subjected to anticipated earth and hydrostatic pressures when the tanks are either full or empty. Metal tanks are prohibited.

ITEM 21. Amend subrule 69.8(4) by adopting the **new** paragraph “b” as follows:

b. Watertight tanks. Tanks shall be watertight. The administrative authority may ask for proof that a tank is watertight prior to approval.

ITEM 22. Amend rule 69.9 introductory paragraph as follows:

567—69.9(455B) Secondary treatment—subsurface soil absorption systems. Soil absorption systems are the best available treatment technology and shall always be used where possible.

ITEM 23. Amend paragraph 69.9(1) a as follows:

a. Locations. All subsurface soil absorption systems shall be located on the property to maximize the vertical separation distance from the bottom of the absorption trench to the seasonal high groundwater level, bedrock, hardpan or other confining layer, but under no circumstances shall this vertical separation be less than 3 feet.

ITEM 24. Amend subrule 69.9(1), b(2), b(3), b(4), c and d as follows:

(2) Alternative analysis. If a professional soil analysis is performed, soil ~~factors~~ characteristics such as soil content, color, texture, and structure shall be used to determine a ~~percolation~~ loading rate.

(3) Acceptable percolation rate. An area is deemed suitable for conventional soil absorption if the average percolation test rate is 60 minutes per inch or less and greater than 1 minute per inch. However, if an alternative ~~type~~ soil absorption system is

proposed (e.g., mound), then the percolation test should be extended to determine whether a percolation rate of 120 minutes per inch is achieved.

c. Groundwater. If seasonal high groundwater level is present within 3 feet of the trench bottom final grade and cannot be successfully lowered by subsurface tile drainage, the area shall be classified as unsuitable for the installation of a standard subsurface soil absorption system. Consult the administrative authority for an acceptable alternative method of wastewater treatment.

d. Site limitations. In situations where specific location or site characteristics would appear to prohibit ~~normal~~ installation of a soil absorption system, design modifications may be approved by the administrative authority which could overcome such limitations. Examples of such modifications could be the installation of subsurface drainage, use of shallow or at-grade trenches, ~~use of dual soil treatment areas, or water conservation plans, drip irrigation, mound systems or use of pretreated effluent.~~

ITEM 25. Amend paragraph 69.9(2) “a” as follows:

a. Percolation and soil loading charts. Table IIIa provides a correlation between percolation rates and soil loading rates. Table IIIb provides soil loading rates based upon soil texture and structure. Use Table IIIa and Table IIIb to determine the appropriate soil loading rate. Table IIIc specifies linear feet of lateral trenches required in accordance with the results of the standard percolation tests, utilizing the soil loading rate, wastewater flow rate and trench width. Tables IIIb and IIIc lists optional the methods for determining length of lateral trenches or the sizing of absorption beds. The alternative option for increased rock usage (Table IIIb) shall be used only when the size of lots limits the use of trench lengths prescribed in Table IIIa. Table IIId provides a method to determine the size of an absorption bed. Absorption beds (Table IIId) shall not be used except when the lot size limitations preclude the installation of a lateral trench system. Further details concerning limitations of these two this alternatives should be obtained from the administrative authority prior to requesting authorization for installation.

ITEM 26. Rescind table IIIa and IIIb in subrule 69.9(2), paragraph b and adopt **new** Table IIIa, IIIb and IIIc as follows:

Table IIIa					
Soil Absorption System Sizing Chart					
(Lineal feet of absorption trench)					
	Two Bedroom	Three Bedroom	Four Bedroom	Five Bedroom	Six Bedroom
Min. Per Inch	300 gal/day ⁽¹⁾	450 gal/day	600 gal/day	750 gal/day	900 gal/day
1-5 ⁽²⁾	160	200	260	340	400
6-15	200	300	400	500	600
16-30	300	400	500	600	700
31-45	400	500	600	800	900
46-60	500	600	700	900	1,100

⁽¹⁾For domestic, nonhousehold wastewater flow rates, refer to Appendix A.

⁽²⁾For soils having more than 50 percent of very fine sand by weight, plus fine sand having a particle size range of 0.05 millimeters (sieve size 270) to 0.25 millimeters (sieve size 60), the 16-30 min. per inch values shall be used when gravelless pipe is installed.

Table IIIb
Alternative Option for Increased Rock Usage
(Only if necessary)

Depth of gravel ⁽⁺⁾ below distribution line	-	Reduction in trench lengths as taken from Table IIIa
12'	-	20%
18'	-	33%
24'	-	40%

⁽⁺⁾ Total depth of trench must not exceed 36'. Soil profile must be consistent with the percolation rate throughout the depth used. Separation from groundwater and confining layers must be maintained.

Table III a
Maximum Soil Application Rates Based Upon Percolation Rates

Percolation Rate (minutes per inch)	Monthly Averages	
	Septic tank effluent ¹	Pre-treated effluent
	BOD ₅ 30 mg/L -220 mg/L TSS 30 mg/L -150 mg/L (gals/sq ft/day) ²	BOD ₅ <30 mg/L TSS <30 mg/L (gals/sq ft/day)
0 to 5	1.2	1.6
Fine sands	0.5	0.9
6 to 10	0.8 – 0.6	1.2
11 to 29	0.6 – 0.5	0.9
30 to 45	0.5 – 0.4	0.7
46 to 60	0.4 – 0.2	0.5
61 to 120	0.0	0.3
greater than 120	0.0	0.0

Note: BOD means biochemical oxygen demand

TSS means total suspended solids

< means less than or equal to

(1) Typical waste strengths for domestic waste. Higher strength waste should consider pre-treatment.

(2) Percolation rates and soil loading rates do not precisely correlate therefore a range is provided.

Table III b
Maximum soil loading rates based upon soil evaluations in gallons per square foot (gal/ft²/day)
for septic tank effluent. Values in () are for secondary treated effluent.

Soil Texture	Single Grain	Massive	Structure Granular, Blocky, or Prismatic			Platy	
			weak	moderate	strong	weak	moderate strong
Coarse Sand and Gravel	1.2 (1.6)	x	1.2 (1.6)	x	x	1.2 (1.6)	X
Medium sands	0.7 (1.4)	x	0.7 (1.4)	x	x	0.7 (1.4)	X
Fine sands	0.5 (0.9)	x	0.5 (0.9)	x	x	0.5 (0.9)	X
Very fine sands*	0.3 (0.5)	x	0.3 (0.5)	x	x	0.3 (0.5)	X

<u>Sandy Loam</u>	<u>X</u>	<u>0.3</u> <u>(0.5)</u>	<u>0.45</u> <u>(0.7)</u>	<u>0.6</u> <u>(1.1)</u>	<u>0.65</u> <u>(1.2)</u>	<u>0.4</u> <u>(0.6)</u>	<u>0.3</u> <u>(0.5)</u>
<u>Loam</u>	<u>X</u>	<u>0.4</u> <u>(0.6)</u>	<u>0.45</u> <u>(0.7)</u>	<u>0.5</u> <u>(0.8)</u>	<u>0.55</u> <u>(0.8)</u>	<u>0.4</u> <u>(0.6)</u>	<u>0.3</u> <u>(0.5)</u>
<u>Silty loam</u>	<u>X</u>	<u>NS</u>	<u>0.4</u> <u>(0.6)</u>	<u>0.5</u> <u>(0.8)</u>	<u>0.5</u> <u>(0.8)</u>	<u>0.3</u> <u>(0.5)</u>	<u>0.2</u> <u>(0.3)</u>
<u>Clay loam</u>	<u>X</u>	<u>NS</u>	<u>0.2</u> <u>(0.3)</u>	<u>0.45</u> <u>(0.7)</u>	<u>0.45</u> <u>(0.7)</u>	<u>0.1</u> <u>(0.2)</u>	<u>0.1</u> <u>(0.2)</u>
<u>Silty clay loam</u>	<u>X</u>	<u>NS</u>	<u>0.2</u> <u>(0.3)</u>	<u>0.45</u> <u>(0.7)</u>	<u>0.45</u> <u>(0.7)</u>	<u>NS</u>	<u>NS</u>

“X” - not found in nature

NS - not suitable for soil absorption

* some very fines sands are difficult to determine flow rates and experience may provide better information and flow rates.

Table III c
Length of absorption trenches in feet

	<u>2 bedroom</u> <u>300 gal.</u>		<u>3 bedroom</u> <u>450 gal.</u>		<u>4 bedroom</u> <u>600 gal.</u>		<u>5 bedroom</u> <u>750 gal.</u>		<u>6 bedroom</u> <u>900 gal.</u>	
<u>Width of trench in feet</u>	<u>2'</u>	<u>3'</u>	<u>2'</u>	<u>3'</u>	<u>2'</u>	<u>3'</u>	<u>2'</u>	<u>3'</u>	<u>2'</u>	<u>3'</u>
<u>Soil loading rate gal/ft²</u>										
<u>0.1</u>	<u>Not suitable for soil absorption trenches</u>									
<u>0.2</u>	<u>750</u>	<u>500</u>	<u>1125*</u>	<u>750</u>	<u>1500*</u>	<u>1000*</u>	<u>1875*</u>	<u>1250*</u>	<u>2250*</u>	<u>1500*</u>
<u>0.3</u>	<u>500</u>	<u>333</u>	<u>750</u>	<u>500</u>	<u>1000*</u>	<u>666</u>	<u>1250*</u>	<u>833*</u>	<u>1500*</u>	<u>1000*</u>
<u>0.4</u>	<u>375</u>	<u>250</u>	<u>562</u>	<u>375</u>	<u>750</u>	<u>500</u>	<u>938*</u>	<u>625</u>	<u>1125*</u>	<u>750</u>
<u>0.5</u>	<u>300</u>	<u>200</u>	<u>450</u>	<u>300</u>	<u>600</u>	<u>400</u>	<u>750</u>	<u>500</u>	<u>900*</u>	<u>600</u>
<u>0.6</u>	<u>250</u>	<u>167</u>	<u>375</u>	<u>250</u>	<u>500</u>	<u>333</u>	<u>625</u>	<u>417</u>	<u>750</u>	<u>500</u>
<u>0.7</u>	<u>214</u>	<u>143</u>	<u>321</u>	<u>214</u>	<u>428</u>	<u>286</u>	<u>536</u>	<u>357</u>	<u>643</u>	<u>429</u>
<u>0.8</u>	<u>188</u>	<u>125</u>	<u>281</u>	<u>188</u>	<u>375</u>	<u>250</u>	<u>469</u>	<u>312</u>	<u>562</u>	<u>375</u>
<u>0.9</u>	<u>167</u>	<u>111</u>	<u>250</u>	<u>167</u>	<u>333</u>	<u>222</u>	<u>417</u>	<u>278</u>	<u>500</u>	<u>333</u>
<u>1.0</u>	<u>150</u>	<u>100</u>	<u>250</u>	<u>150</u>	<u>300</u>	<u>200</u>	<u>375</u>	<u>250</u>	<u>450</u>	<u>300</u>
<u>1.1</u>	<u>136</u>	<u>91</u>	<u>205</u>	<u>136</u>	<u>273</u>	<u>182</u>	<u>341</u>	<u>227</u>	<u>409</u>	<u>273</u>
<u>1.2</u>	<u>125</u>	<u>84</u>	<u>188</u>	<u>125</u>	<u>250</u>	<u>167</u>	<u>313</u>	<u>208</u>	<u>375</u>	<u>250</u>

NS - Not suitable for laterals

* Requires pressure distribution (pump)

ITEM 27. Amend paragraphs 69.9(3) “a” and “b” as follows:

a. Depth. ~~Lateral~~ Soil absorption trenches shall not exceed 36 inches in depth unless authorized by the administrative authority, but a more shallow trench bottom depth of 18 to 24 inches is recommended. Not less than 6 inches of porous soil shall be provided over the laterals. Minimum separation between trench bottom and groundwater, rock formation or other confining layers shall be 36 inches even if extra rock is used under the pipe.

b. Length. No ~~lateral~~ soil absorption trench shall be greater than 100 feet long.

ITEM 28. Amend paragraph 69.9(3)"h" as follows:

h. Soil smearing. Soils with significant clay content should not be worked when wet. If soil moisture causes sidewall smearing, ~~the trench bottom and sidewalls shall be scarified.~~ the installation should be discontinued until conditions improve.

ITEM 29. Rescind subrule 69.9(4) as follows:

~~(4) Gradation. The aggregate shall have not more than 1.5 percent by weight pass a No. 16 sieve.~~

ITEM 30. Amend subrule 69.9(4), paragraph "b" as follows:

a. Trench width. ~~Lateral~~ Soil absorption trenches for gravel systems shall be a minimum of 24 inches and a maximum of 36 inches in width at the bottom of the trench.

ITEM 31. Amend paragraph 69.9(5)"a" as follows:

a. Application. Gravelless subsurface soil absorption systems may be used as an alternative to conventional 4-inch pipe placed in gravel-filled trenches. However, they cannot be used in areas where conventional systems would not be allowed due to poor permeability, high groundwater, or insufficient depth to bedrock.

ITEM 32. Amend paragraph 69.9(5)"c" as follows:

c. Material. The ~~8 and~~ 10-inch I.D. corrugated polyethylene tubing used in gravelless systems shall meet the requirements of ASTM F667, Standard Specification for Large Diameter Corrugated Polyethylene Tubing.

ITEM 33. Amend paragraphs 69.9(5)"g" and "h" as follows:

g. Trench width. ~~If dug with a backhoe, The minimum trench width for the gravelless systems shall be 18 inches in sandy loam soil to ensure proper backfill around the bottom half of the pipe. In clay soils, the minimum trench width shall be 24 inches. If the pipe is laid in with a wheel trencher leaving a curved trench bottom, the trench width may be just 2 inches wider than the outside diameter of the pipe. Gravelless pipe shall cover 90% of the width of the trench bottom.~~

h. Length of trench. The total length of absorption trench for a 10-inch gravelless tubing pipe installation shall be the same as given in Table IIIc-for a conventional soil absorption trench. ~~except for fine sandy soils as noted in Table IIIa footnote. An increase of at least 20 percent in total trench length shall be required if 8-inch tubing is used rather than 10-inch.~~

ITEM 34. Amend paragraph 69.9(6)"c" as follows:

c. Length of trench. The total length of soil absorption trench for chambers ~~24 inches or less in bottom width~~ shall be the same as given in Table IIIc-for a conventional soil absorption trench. ~~For chambers greater than 33 inches in width a reduction of 25 percent from the lengths given in Table IIIa may be used. The chambers shall cover 90% of the width of the trench bottom.~~

ITEM 35. Adopt new subrule 69.9(7) as follows:

69.9(7) Expanded polystyrene (EPS) synthetic aggregate system.

a. Application. EPS aggregate systems may be used as an alternative to conventional 4-inch pipe placed in gravel filled trenches. However, they cannot be used in areas where conventional systems would not be allowed due to poor permeability, high groundwater, or insufficient depth to bedrock.

b. Installation. Manufacturer's specifications and installation procedures shall be closely adhered to.

c. Length of trench. The total length of soil absorption trench for EPS aggregate shall be the same as given in Table IIIc. The EPS aggregate shall cover 90% of the width of the trench bottom.

d. Gravel cover. Unbacked, rolled, 3½-inch-thick fiberglass insulation, untreated building paper, synthetic drainage fabric, or other approved material shall be laid so as to separate the EPS aggregate from the soil backfill.

ITEM 36. Amend paragraph 69.9(8)"f" as follows:

f. ~~Interior coating~~ Materials. All distribution boxes shall be constructed of corrosion-resistant rigid plastic materials. ~~or other corrosion-resistant material approved by the administrative authority.~~

ITEM 37. Amend paragraphs 69.9(9)"a"(1) and "a"(2) as follows:

(1) Pump and pit requirements. In the event the effluent from the septic tank outlet cannot be discharged by gravity and still maintain proper lateral depths, the effluent shall discharge into a watertight ~~vented~~ pump pit with an inside diameter of not less than 24 inches, equipped with a tight-fitting manhole cover at grade level. ~~The sump vent shall extend a minimum of 6 inches above grade level and shall be a minimum size of 1¼ inches fitted with a return bend.~~ The pump shall be of a submersible type of corrosion-resistant material.

(2) Pump setting. The pump shall be installed in the pump pit in a manner that ensures ease of service and protection from frost and settled sludge. The pump shall be set to provide a dosing frequency of approximately ~~twice~~ four times a day based on the maximum design flow. No on-site electrical connections shall be made in the pump pit. These connections shall be made in an exterior weatherproof box.

ITEM 38. Adopt new paragraph 69.9(9)"c" as follows:

c. A filtered pump vault is device installed in a septic tank that houses a pump and screens effluent until it is pumped. Filtered pump vaults may be used when dosing volume is less than 50 gallons. Filtered pump vaults require periodic inspection and cleaning to ensure their continued proper operation.

ITEM 39. Amend paragraph 69.10(1)"d" and "e" as follows:

d. Mound systems shall be constructed only upon undisturbed naturally occurring soils or where a soil analysis has determined the site is suitable.

e. Mound systems shall be located in accordance with the distances specified in Table I as measured from the outer edge of the sand in the mound

ITEM 40. Amend paragraph 69.10(3)"b" as follows:

b. Gravel shall be washed and shall range in size from ¾ inch to 2½ inches. meet the requirements specified in 69.9(4)a.

ITEM 41. Amend paragraph 69.10(3)“g” as follows:

g. Construction equipment which would cause undesirable compaction of the soil shall be kept off the base area. Construction or plowing shall not be initiated when the soil moisture content is high. If a sample of soil from approximately 9 inches below the surface can be easily rolled into a 1/8– to 1/4–inch diameter wire 1½ inches long or more, the soil moisture content is too high for construction purposes.

ITEM 42. Amend paragraph 69.10(3)“j” as follows:

j. The base absorption area of the mound is to be calculated based on the results of percolation rate or soil analysis as indicated in Tables IIIa or IIIb and the flow rate. ~~Table IV. The base area of the mound below and down slope from the trenches, excluding the area under the end slopes, must be large enough for the natural soil to absorb the estimated daily wastewater flow.~~ The maximum width of the mound shall be twelve feet.

ITEM 43. Rescind Table IV, paragraph 69.10(3)“j” as follows:

Table IV	
Percolation Rate Min/Inch	Application Rate Gal/Square Foot/Day
Less than 1	Not Suitable
1–5	1.25
6–15	1.00
16–30	.75
31–45	.50
46–60	.40
61–90	.20
91–120	.10
Over 120	Not Suitable

ITEM 44. Amend paragraph 69.10(3)“m”(1) as follows:

(1) The distribution pipe shall be rigid plastic pipe, schedule 40 or 80 with 1–inch nominal diameter or equivalent design that ensures proper distribution.

ITEM 45. Amend paragraph 69.10(3)“m”(5) and (6) as follows:

(5) The outer ends of all pressure distribution lines shall be ~~securely capped.~~ turned up with a long 90 degree elbow or two 45 degree elbows to allow for cleaning. The outer ends will have a screw on cap and cover. The cover shall be accessible from the ground surface without excavation.

(6) The central pressure manifold should consist of 1½–inch or 2–inch solid plastic pipe using a tee ~~or cross~~ for connecting the distribution lines or an equivalent design that ensures uniform distribution.

ITEM 46. Amend paragraph 69.10(3)“o” and “p” as follows:

o. The absorption trench or trenches shall be hand excavated to a depth of 9 inches. The bottoms of the trenches ~~made certain to~~ shall be level.

p. ~~Twelve~~Nine inches of gravel shall be placed in the trench and ~~hand~~ leveled. ~~and then 3 inches of the gravel removed with a shovel in the location where the distribution pipe will be placed.~~ After the distribution pipe is placed the pipe shall be covered with 3 inches of gravel.

ITEM 47. Amend paragraph 69.10(3)"r" as follows:

r. After installation of the distribution system, ~~gravel and material over the gravel~~ the distribution system shall be pressure tested before covering with gravel. The entire mound is to be covered with topsoil native to the site or of similar characteristics to support vegetation found in the area. The entire mound shall be crowned by providing 12 inches of topsoil on the side slopes with a minimum of 18 inches over the center of the mound. The entire mound shall be seeded, sodded or otherwise provided with a grass cover to ensure stability of the installation.

ITEM 48. Amend subrule 69.10(4) as follows:

69.10(4) Dosing.

- a. Pump dosing shall be required for mound systems.
- b. The dosing volume shall be ~~five~~ three to ten times the distribution piping network volume but not more than twenty-five percent (25%) of the design flow shall be applied to the soil in one dose.
- c. ~~The size of~~ The dosing pump or siphon shall be capable of maintaining an approximate pressure of one psi a squirt height of three feet above the pipe at the outer ends of the distribution lines. All lines shall have an equal squirt height above the pipe to maintain equal distribution.

ITEM 49. Adopt **new** rule 567-69.11(455B) as follows:

567-69.11 (455B) At-grade systems.

69.11(1) General Requirements

- a. At-grade systems shall be permitted only after a thorough site evaluation has been made and landscaping, dwelling placement, effect on surface drainage and general topography have been considered.
- b. At-grade systems shall not be utilized on sites which are subject to flooding with a ten-year or greater frequency.
- c. At-grade systems shall not be utilized on soils where the high groundwater level, impermeable bedrock or soil strata having a percolation rate exceeding 60 minutes per inch occur within 36 inches of natural grade.
- d. At-grade systems shall be constructed only upon undisturbed naturally occurring soils or where a soil analysis has determined the site is suitable.
- e. At-grade systems shall be located in accordance with the distances specified in Table I as measured from the outer edge of the gravel in the system.
- f. No buildings, driveways or other surface or subsurface obstructions shall be permitted within 25 feet on the down gradient side of the at-grade system when the at-grade is constructed on a slope greater than 5 percent. No future construction shall be permitted in this effluent disposal area as long as the at-grade is in use.
- g. Specifications given in these rules for at-grade systems are minimal and may not be sufficient for all applications. Technical specifications are changing with

experience and research. Other design information beyond the scope of these rules may be necessary to properly design an at-grade system.

69.11(2) Construction details.

a. There shall be a minimum of 3 feet of undisturbed naturally occurring soils between the bottom of the gravel in the at-grade system and the highest elevation of the limiting conditions defined in 69.11(1)“c.”

b. An at-grade system may be installed up to 12 inches deep.

c. Gravel shall meet the requirements specified in 69.9(4)a. Chambers or EPS aggregate are acceptable alternatives to gravel.

d. At-grade systems shall utilize absorption bed distribution piping design. The bed shall be installed with the long dimension parallel to the land contour. Systems on steep slopes with slowly permeable soils should be narrow to reduce the possibility of toe seepage.

e. No soils under or within 15 feet of any at-grade may be disturbed. On sloping sites no soils shall be disturbed within 10 foot uphill and 15 foot plus 5 foot additional for every 5% slope downhill.

f. Construction equipment which would cause undesirable compaction of the soil shall be kept off the base area. Construction or plowing shall not be initiated when the soil moisture content is high. If a sample of soil from approximately 9 inches below the surface can be easily rolled into a 1/8-inch diameter wire 1 ½ inches long, the soil moisture content is too high for construction purposes.

g. Above ground vegetation shall be closely cut and removed from the ground surface throughout the area to be utilized for the placement of the fill material.

h. The area shall be plowed to a minimum depth of 7 to 9 inches, parallel to the land contour with the plow throwing the soil up slope to provide a proper interface between the fill and the natural soil. Chisel teeth on a backhoe bucket shall be at least as long as the depth of plowing. Tree stumps should be cut flush with the surface of the ground, and roots should not be pulled. All work shall be done from the uphill side of the at-grade system.

i. The gravel bed absorption area of the at-grade is to be calculated based on the results of percolation rate or soil analysis as indicated in Tables IIIa or IIIb and the flow rate. The maximum width of the at-grade system shall be eight feet.

j. One foot of loamy cover material shall be installed over the rock bed. Cover shall extend at least five feet from the ends of the rock bed and be sloped to divert surface water. Side slopes shall not be steeper than 4:1. The upper six inches of the loamy soil cover must be topsoil borrow. Topsoil borrow must be of a quality that provides a good vegetative cover on the at-grade system.

k. Distribution system.

(1) The distribution pipe shall be rigid plastic pipe, schedule 40 or 80 with 1–inch nominal diameter or equivalent design that ensures proper distribution.

(2) The distribution pipe shall be provided with a single row of ¼–inch perforations in a straight line 30 inches on center along the length of the pipe or an equivalent design that ensures uniform distribution. All joints and connections shall be solvent–cemented.

(3) The distribution pipe shall be placed in the clean, washed gravel (or crushed limestone as described in 69.9(4)“a”) with holes downward. The gravel shall be a minimum of 10 inches in depth below and 2 inches in depth above the pipe.

(4) Distribution pipe shall be installed in the center of the gravel bed on slopes less than one percent and on the upslope edge at the gravel bed absorption width on slopes one percent or greater.

(5) No perforations shall be permitted within 3 inches of the outer ends of any distribution pipes.

(6) The outer ends of all pressure distribution lines shall be turned up with a long 90 degree elbow or two 45 degree elbows to allow for cleaning. The outer ends will have a screw on cap and cover. The cover shall be accessible from the ground surface without excavation.

(7) The central pressure manifold should consist of 1½-inch or 2-inch solid plastic pipe using a tee for connecting the distribution lines or an equivalent design that ensures uniform distribution.

(8) The top of the gravel shall be covered with synthetic drainage fabric. Unbacked, rolled 3½-inch-thick fiberglass insulation, untreated building paper, or other suitable material may be used with approval of the administrative authority. Plastic or treated building paper shall not be used.

69.11(3) Dosing.

a. Pump dosing shall be required for at-grade systems.

b. The dosing volume shall be three to ten times the distribution piping network volume but not more than twenty-five percent (25%) of the design flow shall be applied to the soil in one dose.

c. The dosing pump shall be capable of maintaining a squirt height of three feet above the pipe at the outer ends of the distribution lines. All lines shall have an equal squirt height above the pipe to maintain equal distribution

ITEM 50. Amend rule 567-69.13(455B) title as follows:

567—69.13(455B) Intermittent sand filters. Packed bed media filters.

ITEM 51. Amend subrule 69.13(1) as follows:

69.13(1) Intermittent Sand Filters. The general requirements for intermittent sand filters are as follows:

a. Use. Intermittent sand filters may be used when the administrative authority determines the site is unacceptable for a ~~full-sized~~ soil absorption system.

b. Location. Intermittent sand filters shall be located in accordance with the distances specified in Table I.

c. Effluent sampling. A sampling port shall be available at the discharge point of the filter or shall be installed in the discharge line.

~~Monitoring and effluent sampling of intermittent sand filters must meet the requirements of the NPDES permit as specified in rule 69.2(455B). Such sampling shall be performed annually for a subsurface sand filter as described in 69.9(3) and twice a year, at six-month intervals, for free access sand filters as described in 69.9(4).~~

~~(Beginning January 1, 2005, such sampling shall be done by a qualified sampler.) Tests shall be run on all samples for carbonaceous biochemical oxygen demand (CBOD5) and Escherichia coli (E. coli) (testing for E. coli is limited to locations noted in the following sentence), and once a year in the spring for total suspended solids (TSS). The maximum CBOD5, TSS, and E. coli count limits are as follows. E. coli tests shall only be required~~

~~where effluent is discharged into (directly or within one mile upgradient of the shoreline of) a Class “A1,” Class “A2,” Class “A3” or Class “C” water.~~

Effluents Discharging To	E. coli cfu/100 mL	CBOD5 mg/L	TSS mg/L
the United States Class “A1,” “A2,” “A3” and “C” waters[*]	235	25	25
All other water use classifications	no limit	25	25

~~A separation distance of 750 feet shall be maintained between any point of discharge and the shoreline of a Class “A1,” “A2,” or “A3” water. All intermittent sand filters having an open discharge will be sampled in accordance with the requirements of NPDES General Permit # 4.~~

d. No change.

ITEM 52. Amend paragraph 69.13(2)”b” as follows:

b. Pipelines. Each bed shall contain a horizontal set of collector lines. The collector lines shall be equivalent to SDR 35 PVC pipe, 8 10–inch diameter gravelless drainpipe, EPS aggregate or other suitable materials.

ITEM 53. Adopt **new** paragraph 69.13”b”(7) as follows:

(7) The discharge pipe that extends from the collection system shall be SDR 35 PVC pipe at a minimum.

ITEM 54. Amend paragraph 69.13(3)”a”(5) as follows:

(5) Separation layer. A layer of material such as unbacked, rolled 3½–inch–thick fiberglass insulation, untreated building paper of 40– to 60–pound weight or synthetic drainage fabric ~~or 4 to 6 inches of marsh hay or straw~~ shall be placed upon the top of the upper layer of gravel.

ITEM 55. Adopt **new** paragraphs 69.13(3)”a”(8) and (9) as follows:

(8) As an alternative to gravel and rigid PVC pipe, EPS aggregate may be used for the distribution system. The EPS aggregate shall cover the entire surface of the sand filter while maintaining the 3 ft separation between distribution pipes.

(9) Pressure distribution. Pressure dosing is recommended to improve effluent distribution across the surface of the filter. Pressure distribution systems may use conventional rock and PVC pipe, chambers with small diameter pipe or EPS aggregate with small diameter pipe.

ITEM 56. Amend paragraph 69.13(3)”b” as follows:

b. Sizing of subsurface sand filters.

(1) Gravity flow. For residential systems, ~~single bed~~ subsurface sand filters shall be sized at a rate of 240 square feet of surface area per bedroom.

~~2. Dual subsurface sand filters, constructed in series, shall be sized at the rate of 160 square feet of surface per bedroom in the first filter and 80 square feet of surface area per bedroom in the second filter in the series.~~

(2) Pressure Siphon dosed. For residential systems, ~~single-bed~~ subsurface sand filters dosed by a ~~pump or~~ dosing siphon ~~may~~ shall be sized at a rate of 180 square feet of surface area per bedroom.

~~2. Dual subsurface sand filters, constructed in series, may be sized at the rate of 120 square feet of surface per bedroom in the first filter and 60 square feet of surface area per bedroom in the second filter in series.~~

(3) Pressure dosed. For residential systems, subsurface sand filters dosed by a pump shall be sized at a rate of 150 square feet of surface area per bedroom.

(4) Nonhousehold. Effluent application rates for commercial systems treating domestic waste shall not exceed the following:

~~1. 1.5 gallon/square feet/day for double bed sand filters.~~

1. 1.0 gallon/square feet/day for single bed sand filters.

2. Total surface area for any subsurface sand filter system shall not be less than 200 square feet.

ITEM 57. Adopt new paragraph 69.13(4)"a" as follows:

a. Pretreatment required. These systems must be preceded by a secondary treatment system discharging a treated effluent with BOD and TSS values less than 30 mg/L.

ITEM 58. Amend paragraphs 69.13(4)"b", "c", "d" and "e" as follows:

b. Description. Media characteristics and underdrain systems for free access filters are similar to those for subsurface filters. Dosing of the filter should provide ~~flood the bed to a depth of approximately 2 inches~~ uniform distribution across the entire surface of the bed. Dosing frequency is usually greater than ~~two~~ four times per day. For coarser media (greater than 0.5 mm) a dosing frequency greater than ~~four~~ six times per day is desirable. Higher acceptable loadings on these filters as compared to subsurface filters relate primarily to the accessibility of the filter surface for maintenance. Gravel is not used on top of the sand media, and the distribution pipes are exposed above the surface.

c. Distribution. Distribution to the filter may be by ~~means of troughs~~ perforated pipe laid on the surface, pipelines discharging to splash plates located at the center or corners of the filter, or spray distributors. Care must be taken to ensure that lines discharging directly to the filter surface do not erode the sand surface. The use of curbs around the splash plates or large stones placed around the periphery of the plates will reduce the scour. A layer of washed pea gravel placed over the filter media may also be employed to avoid surface erosion. This practice will create maintenance difficulties, however, when it is time to rake or remove a portion of the media surface.

d. Covers. Free access filters ~~may~~ shall be covered to protect against severe weather conditions and to avoid encroachment of weeds or animals. The cover also serves to reduce odor conditions. Covers may be constructed of treated wooden planks, galvanized metal, or other suitable material. Screens or hardware cloth mounted on wooden frames may also serve to protect filter surfaces. Where weather conditions dictate, covers should be insulated. A space of 12 to 24 inches should be allowed between the insulated cover and sand surface. Free access filters may not be buried by soil or sod.

e. Loading. The hydraulic loading for free access sand filters ~~should~~ shall be from 2.0 to 5.0 gpd/sq.ft.

ITEM 59. Rescind paragraph 69.13(4)"f" as follows:

~~f. Number of filters. Dual filters each sized for the design flow are recommended for loading rates in excess of 3½ gpd/sq.ft. treating septic tank effluent.~~

ITEM 60. Amend paragraphs 69.13(5)"b" and "c" as follows:

b. Dosing siphons. When a dosing siphon is used where elevations permit, such siphon shall be installed as follows:

(1) Dosing siphons shall be installed between the septic tank and the ~~first~~ sand filter bed.

(2) Dosing siphons shall be installed with strict adherence to the manufacturer's instructions.

c. Dosing tanks. The dosing tank shall be of such size that the siphon will ~~load~~ distribute effluent over the entire filter during the dosing cycle. A dosing frequency of greater than two times per day is recommended. Smaller more frequent doses are recommended.

ITEM 61. Adopt **new** paragraph 69.13(5)"d" as follows:

d. Effluent sampling. A sampling port shall be available at the discharge point of the filter or shall be installed in the discharge line. All free-access sand filters having an open discharge will be sampled in accordance with the requirements of NPDES General Permit # 4.

ITEM 62. Adopt **new** subrule 69.13(6) as follows:

69.13(6) Peat Moss Biofilter Systems.

General requirements for individual peat moss biofilter systems are as follows:

a. Use. Peat Moss Biofilter Systems may be used when the administrative authority determines the site is unacceptable for a soil absorption system.

b. Certification. All peat moss biofilter systems shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class I, including appendices (March 2008) or equivalent testing as determined by the department.

c. Installation and Operation. All peat moss biofilter systems shall be preceded by a septic tank and installed, operated and maintained in accordance with the manufacturer's instructions and the requirements of the Administrative Authority. The septic tank shall be sized as specified in rule 69.8(2)a or larger if recommended by the manufacturer. Sizing of the system should be based on the manufacturer's specifications.

d. Maintenance Contract. A maintenance contract for the proper monitoring and servicing of the entire treatment system shall be established between the owner and a certified technician for the life of the system. All monitoring and servicing shall be performed by a manufacturer's certified technician or person demonstrating knowledge of the system in accordance with the manufacturer's standards. Manufacturers are responsible for ensuring an adequate number of maintenance providers are available to service all peat moss biofilters at the specified intervals. Maintenance contracts and responsibility waivers shall be recorded with the County Recorder and in the abstract of

title for the premises on which the system is installed. The maintenance provider shall perform the required maintenance and reporting to the owner and to the Administrative Authority. The maintenance provider shall also report any discontinuance of maintenance of the peat moss biofilter system to the Administrative Authority. Peat moss biofilter systems shall be inspected annually by the maintenance provider. A copy of the maintenance contract shall be on file in the office of the Administrative Authority.

e. Effluent sampling. A sampling port shall be available at the discharge point of the filter or shall be installed in the discharge line. All peat moss biofilter systems having an open discharge will be sampled in accordance with the requirements of NPDES General Permit # 4.

ITEM 63. Adopt **new** subrule 69.13(7) as follows:

69.13(7) Recirculating textile filter systems.

General requirements for recirculating textile filtration systems are as follows:

a. Use. Recirculating textile filter systems may be used when the administrative authority determines the site is unacceptable for a soil absorption system.

b. Certification. All recirculating textile filter systems shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class I, including appendices (March 2008) or equivalent testing as determined by the department.

Design. Recirculating textile filter systems shall be designed to prevent the passage of untreated waste during an equipment malfunction or power outage.

c. Installation and Operation. Recirculating textile filter systems shall be preceded by a septic tank and installed, operated and maintained in accordance with the manufacturer's instructions and the requirements of the Administrative Authority. The septic tank shall be sized as specified in rule 69.8(2)a , or larger if recommended by the manufacturer. Sizing of the system should be based on the manufacturer's specifications.

d. Maintenance Contract. A maintenance contract for the proper monitoring and servicing of the entire treatment system shall be established between the owner and a certified technician for the life of the system. All monitoring and servicing shall be performed by a manufacturer's certified technician or person demonstrating knowledge of the system in accordance with the manufacturer's standards. Manufacturers are responsible for ensuring an adequate number of maintenance providers are available to service all recirculating textile filters at the specified intervals. Maintenance contracts and responsibility waivers shall be recorded with the County Recorder and in the abstract of title for the premises on which the system is installed. The maintenance provider shall perform the required maintenance and reporting to the owner and to the Administrative Authority. The maintenance provider shall also report any discontinuance of maintenance of the system to the Administrative Authority. Recirculating textile filter systems shall be inspected, at minimum, annually by the maintenance provider. A copy of the maintenance contract shall be on file in the office of the Administrative Authority.

e. Effluent sampling. A sampling port shall be available at the discharge point of the filter or shall be installed in the discharge line. All recirculating textile filter systems having an open discharge will be sampled in accordance with the requirements of NPDES General Permit # 4.

ITEM 64. Amend rule 69.14(455B) introductory paragraph as follows:

567—69.14(455B) ~~Individual mechanical aerobic wastewater treatment systems.~~ Aerobic treatment units. General requirements for ~~mechanical aerobic wastewater treatment systems~~ aerobic treatment units are as follows:

ITEM 65. Amend subrules 69.14(1), (2) and (3) as follows:

69.14(1) Use. ~~aerobic-~~ Aerobic treatment units may be used only when the administrative authority determines that the site is unacceptable for a ~~full-sized~~ soil absorption system. Because of the higher maintenance requirements of ~~mechanical/aerobic systems~~ aerobic treatment units, preference should be given to ~~sand packed bed media~~ filters, where conditions allow.

69.14(2) Certification. All ~~individual mechanical aerobic wastewater treatment plants~~ aerobic treatment units shall be certified by an ANSI-accredited third-party certifier to meet National Sanitation Foundation Standard 40, Class I, including appendices ~~May 1996)~~ or equivalent testing as determined by the department.

69.14(3) Installation and operation. All ~~individual mechanical aerobic wastewater treatment plants~~ aerobic treatment units shall be installed, operated and maintained in accordance with the manufacturer's instructions and the requirements of the administrative authority. The aerobic plants shall have a minimum treatment capacity of 150 gallons per bedroom per day or 500 gallons, whichever is greater.

ITEM 66. Adopt **new** subrule 69.14(4) as follows:

69.14(4) Pre-tank required. All aerobic treatment units shall be preceded by a septic or trash tank with a minimum capacity of 500 gallons. The trash tank may be a single compartment tank. This requirement can be met if the aerobic treatment unit has a trash tank built-in as part of the units design.

ITEM 67. Amend subrules 69.14(5), (6) and (7) as follows:

69.14(5) Effluent treatment. The effluent from ~~individual mechanical aerobic wastewater treatment plants~~ aerobic treatment units shall receive additional treatment through the use of intermittent sand filters or ~~mound systems or subsurface soil~~ absorption systems of a magnitude ~~of half that prescribed in rule 69.6(455B), 69.7(455B) or 69.9(455B) or by discharge to a drip irrigation system as sized in 69.8(455B).~~ prescribed in rule 69.9(2) for pre-treated effluent.

69.14(6) Maintenance contract. A maintenance contract with a manufacturer-certified technician or equivalent as determined by the department, shall be maintained at all times. The maintenance contract shall include the aerobic treatment unit and effluent disposal system. Manufacturers are responsible for ensuring an adequate number of maintenance providers are available to service all aerobic treatment units at the specified intervals. Maintenance agreements and responsibility waivers shall be recorded with the county recorder and in the abstract of title for the premises on which ~~mechanical~~ aerobic treatment units are installed. ~~Mechanical Aerobic treatment units~~ shall be inspected for proper operation at least twice a year on six month intervals.

69.14(7) Effluent sampling. ~~Any open discharge from systems involving mechanical aeration shall have the effluent sampled twice a year at six month intervals. (Beginning January 1, 2005, such sampling shall be done by a qualified sampler.) Tests shall be run twice a year on all samples for CBOD5 and E. coli, and once a year in the spring for TSS, as prescribed in 69.9(1).~~

All aerobic treatment unit systems having an open discharge will be sampled in accordance with the requirements of NPDES General Permit # 4.

ITEM 68. Amend paragraph 69.15(1)"a", "b" and "c" as follows:

a. Application. Constructed wetlands shall only be used where soil percolation rates at the site exceed 120 minutes per inch. Because of the higher maintenance requirements of constructed wetland systems, preference should be given to ~~sand~~ packed bed media filters, where conditions allow.

b. Effluent treatment. The effluent from a constructed wetland shall receive additional treatment through the use of intermittent sand filters of a magnitude ~~of half that~~ prescribed in rule 69.9(2) for pre-treated effluent.

c. Effluent sampling. ~~Effluent sampling of constructed wetlands shall be performed twice a year at six month intervals. (Beginning January 1, 2005, such sampling shall be done by a qualified sampler.) Tests shall be run on all parameters as required in 69.9(1).~~

All constructed wetland systems having an open discharge will be sampled in accordance with the requirements of NPDES General Permit # 4.

ITEM 69. Amend subrule 69.16(1) as follows:

69.12(1) General requirements. Waste stabilization ponds shall only be used for non-residential applications and shall be designed by an Iowa licensed engineer. Waste stabilization ponds may be used if designed and constructed in accordance with the following criteria and provided the effluent is discharged in accordance with the requirements of the general NPDES permit listed in rule 69.4(455B). A septic tank sized according to rule 69.8(455B) shall precede a waste stabilization pond.

ITEM 70. Amend subrule 69.16(7) as follows:

69.16(7) ~~Discharge~~ Effluent sampling.

~~a. Controlled discharge. If the pond is designed for open discharge, it must be discharged under controlled conditions. The effluent must be tested before discharge, and effluent quality must be less than 25 mg/L of CBOD5 and less than 25 mg/L of TSS. Another test must be taken during discharge with the same results. Pond discharge is permitted only in spring and fall when stream flows are highest.~~

~~b. Continuous discharge. If the pond is to have an unlimited continuous discharge, the effluent shall receive additional treatment through the use of intermittent sand filters, mound systems or subsurface absorption systems of a magnitude of half that prescribed in rules 69.6(455B), 69.7(455B) and 69.9(455B). Under continuous discharge, effluent sampling shall be as required for constructed wetlands as outlined in 69.11(1)"c."~~

All waste stabilization ponds having an open discharge will be sampled in accordance with the requirements of NPDES General Permit # 4.

ITEM 71. Rescind originally numbered subrule 69.15(455B) as follows:

~~567—69.15(455B) Requirements for chemical toilets. All chemical toilets shall comply with the following requirements:~~

~~69.15(1) Tank. Chemical toilets for use in isolated residences shall have a receptacle of smooth, impervious material that is resistant to chemicals and easily cleanable.~~

~~69.15(2) Vent. When vents are required for chemical toilets, they shall be of durable corrosion resistant material installed in a professional manner.~~

~~69.15(3) Mixing and chemical charge. The fixture shall be equipped with a mixing device and shall be charged with the proper concentration of bactericidal chemical or chemicals. Chemical recharges shall be added and mixed with the contents when necessary to maintain sufficient solution strength and to suppress odors.~~

~~69.15(4) Toilet rooms. Chemical toilets shall be located in toilet rooms which are well lighted, ventilated and maintained in a nuisance free condition.~~

~~69.15(5) Final disposal of receptacle contents. The receptacle contents shall be disposed of in accordance with the requirements of 567—Chapter 68. The recommended method of disposal is discharging to a municipal sewage treatment facility.~~

ITEM 72. Amend rule 567-69.21(455B) title as follows:

567—69.21(455B) ~~Alternative or innovative onsite wastewater treatment and~~
Experimental private sewage disposal systems.

ITEM 73. Amend subrule 69.21(1) as follows:

69.21(1) Design requirements. ~~Alternative or innovative Experimental~~ systems are to be designed and operated in accordance with approved standards and operating procedures established by individual administrative authorities.

ITEM 74. Amend paragraph 69.21(1)“c” as follows:

c. Administrative authorities should prepare for signature an enforceable agreement to be placed on record which would require that present and future system owners meet all applicable rule requirements. In the event of noncompliance, the administrative authority shall require that adequate steps be taken by the system owner to bring the system into compliance or replace the system with a system prescribed in these rules.

ITEM 75. Rescind paragraph 69.21(1)“d” as follows:

~~d. Wastewater management districts may be formed for the purpose of providing specialized control of on-site wastewater treatment and disposal systems located in certain problem areas or in intensive development areas. Formation of such wastewater management districts shall be coordinated under the guidance of the administrative authority and shall meet all applicable rule requirements.~~

ITEM 76. Rescind reserved subrule 69.18(2)

ITEM 77. Amend Appendix A as follows:

Appendix A			
Estimates of Nonhousehold Domestic Sewage Flow Rates			
		Gallons per day per unit	
		Average	Maximum
Source of use for	(units)	(Secondary	(Septic

sewage unit		treatment unit sizing)	tank)
<u>Dwelling units</u>			
Hotels or luxury motels	(Each guest)	50	60
	(Add per employee)	11	13
or	(Per square foot)	0.26	0.3
Discount motels	(Each guest)	30	40
	(Add per employee)	11	13
or	(Per square foot)		0.46
Rooming house	(Each resident)	40	50
	(Add per nonresident meal)	2.5	4.0
<u>Commercial/Industrial</u>			
Retail stores	(Per square foot of sales area)	0.1	0.15
or	(Each customer)	2.5	5
	(Plus each employee)	11	15
or	(Each toilet room)	530	630
Offices	(Each employee)	15	18
or	(Per square foot)	0.1	0.25
Medical offices	(Per square foot)	0.6	1.6
Industrial buildings	(Each employee)	15	20
(Does not include process ware or cafeteria)			
Construction camp	(Each employee)	15	20
Visitor center	(Each visitor)	5	20
Laundromat	(Each machine)	580	690
or	(Each load)	50	50
or	(Per square foot)	2.2	2.9
Barber shops	(Per chair)	55	80
Beauty shops	(Per station)	270	300
Car washes	(Per inside square foot)	5	10
(Does not include car wash water)			

		Gallons per day per unit	
Source of use for sewage unit	(units)	Average (Secondary treatment unit sizing)	Maximum (Septic tank)

Eating and Drinking Establishments

Restaurant	(Per meal)	2.5	4.0
(Does not include bar or lounge)			
or	(Each seat)	24	40
	(Plus add for each employee)	11	13

Dining hall	(Per meal)	2.5	4.0
Coffee shop	(Each customer)	2.0	2.5
	(Add per employee)	11	13
Cafeteria	(Each customer)	2.0	2.5
	(Add per employee)	11	13
Drive-in	(Per car stall)	110	145
Bar or lounge	(Each customer)	2.0	5.5
	(Add per employee)	13	16
or	(Per seat)	32	40
Country clubs (no meals)	(Per member)	22	22
or	(Per member)	105	130
	(Meals and showers)		
or	(Per member in residence)	75	100
<u>Resorts</u>			
Housekeeping cabin	(Per person)		50
Lodge	(Per person)	53	74
Parks/swimming pools	(Per guest)	10	13
Picnic parks with toilet only	(Per guest)	5	10
Movie theaters	(Per guest)		4.0
Drive-in theaters	(Per space)	3	5
Skating rink/dance hall	(Per customer)		10
Bowling lanes	(Per lane)	133	200
<u>Transportation</u>			
Airport, bus or rail depot	(Per passenger)	2.5	4
or	(Per square foot)	3.33	6.5
or	(Per public restroom)	500	630
Auto service station	(Each vehicle served)	11	13
	(Add per employee)	13	16
or	(Per inside square foot)	0.25	0.6
or	(Per public restroom)	500	630

		Gallons per day per unit	
Source of use for sewage unit	(units)	Average	Maximum
		(Secondary treatment unit sizing)	(Septic tank)

<u>Institutional</u>			
Hospitals	(Each medical bed)	175	250
	(Add per employee)	10	16
Mental institution	(Each bed)	105	175
	(Add per employee)	10	16
Prison or jail	(Each inmate)	120	160
	(Add per employee)	10	16

Nursing home	(Each resident)		145
	(Add per employee)		16
<u>Schools and Churches</u>			
School	(Per student) (No gym, 40 cafeteria or showers)		17
	(Per student) (Cafeteria 16 only)		17
	(Per student) 20		30
	(Cafeteria, gym & showers)		
Boarding school	(Per student) 75		115
Churches	(Per member) 0.14		0.86 <u>2</u>
	(per member with 1 kitchen)		1.5
	(Add per Sunday 0.14 school —student)		0.86
<u>Recreational</u>			
Campground/with hookups	(Per person) 32		40
or	(Per site with central 100 bath)		100
	(Per site) 50		75
	(Add for dump station 13 w/ hookup)		16
Day camp (no meals)	(Per person) 13		16
Weekly overnight camp	(Per member) 33		33

ITEM 78. Amend Appendix B as follows:

Appendix B

Percolation Test Procedure

(1) A minimum of three test holes distributed evenly over the proposed lateral field is required.

(2) Percolation test holes shall be 4 to 12 inches in diameter and to the same depth as the proposed absorption trenches (not to exceed 36 inches in depth).

(3) Sides and bottoms of the test holes shall be scratched or roughened to provide a natural surface. All loose material shall be removed from each hole.

(4) The bottoms of the test holes shall be covered with approximately 2 inches of rock to protect the bottom from scouring action when the water is added.

(5) The hole shall be filled with at least 12 inches of clean water and this depth shall be maintained for at least 4 hours and preferably overnight if clay soils are present. It is important that the soil be allowed to soak for a sufficiently long period of time to allow the soil to swell if accurate results are to be obtained. Failure to perform the pre-soak when required will invalidate the percolation test results.

(6) In sandy soils with little or no clay, soaking is not necessary. If, after filling the hole twice with 12 inches of water, the water seeps completely away in less than 10 minutes, the test can proceed immediately.

(7) Except for sandy soils, percolation rate measurements should be made at least 4 hours but no more than 24 hours after the soaking period began. Any soil that sloughed into the hole during the soaking period is removed and the water level is adjusted to 6 inches above the gravel (or 8 inches above the bottom of the hole). At no time during the test is the water level allowed to rise more than 6 inches above the gravel.

(8) Immediately after adjustment, the water level is measured from a fixed reference point to the nearest 1/8 inch at 30-minute intervals. The test is continued until two successive water level drops do not vary by more than 1/8 inch. At least three measurements are made.

(9) After each measurement, the water level is readjusted to the 6-inch level. The last water level drop is used to calculate the percolation rate.

(10) In sandy soils or soils in which the first 6 inches of water added after the soaking period seeps away in less than 30 minutes, water level measurements are made at 10-minute intervals for a 1-hour period. The last water level drop is used to calculate percolation rate.

(11) The percolation rate is calculated for each test hole by dividing the time interval used between measurements by the magnitude of the last water level drop. This calculation results in a percolation rate in terms of minutes per inch. To determine the percolation rate for the area, the rates obtained from each hole are averaged. (If tests in the area vary by more than 20 minutes per inch, variations in soil type are indicated. Under these circumstances, percolation rates should not be averaged.) EXAMPLE: If the last measured drop in water level after 30 minutes is 5/8 inch, the percolation rate = (30 minutes)/(5/8 inch) = 48 minutes/inch.

The following change is proposed for IAC567-Chapter 64

ITEM 79, Amend subrule 64.15(4) as follows:

64.15(4) “Discharge from Onsite Wastewater Treatment and Disposal Systems,” NPDES General Permit No. 4, effective [effective date of rule], to [two years from effective date of rule].

Date

Richard Leopold, Director

Administrative Rule Fiscal Impact Statement

Date: 9/15/08

Agency: Department of Natural Resources

IAC Citation: IAC 567 –Chapter 69, Onsite Wastewater Treatment and Disposal Systems

Agency Contact: Daniel Olson, RS

Summary of the Rule: Chapter 69 contains the construction requirements for onsite wastewater treatment or septic systems. The rule changes reflect changes and additions to include the latest technologies and research in septic systems. The rule changes also include a section on time of transfer inspections. Inspection of septic systems when a home is sold will be required by SF261. The rules outline the inspection procedure and a certified inspector program.

Fill in this box if the impact meets these criteria:

☐ No Fiscal Impact to the State.

☒ Fiscal Impact of less than \$100,000 annually or \$500,000 over 5 years.

☐ Fiscal Impact cannot be determined.

Brief Explanation:

The state will incur the costs to manage the time of transfer inspection program. Considerable staff time will be required to implement the program and to certify inspectors and track that certification.

Fill in the form below if the impact does not fit the criteria above:

☐ Fiscal Impact of \$100,000 annually or \$500,000 over 5 years.

* Fill in the rest of the Fiscal Impact Statement form.

Assumptions:

Describe how estimates were derived:

Estimated Impact to the State by Fiscal Year

	<u>Year 1 (FY 09)</u>	<u>Year 2 (FY 10)</u>
	<u>1</u>	<u>1</u>
Revenue by Each Source:		
GENERAL FUND		
FEDERAL FUNDS		
Other (specify) certified inspector fees	\$35,000	
		\$35,000
	<u>\$35,000</u>	<u>\$35,000</u>
TOTAL REVENUE		
Expenditures:		
GENERAL FUND		
FEDERAL FUNDS		
Other (specify) 1 FTE first year		
½ FTE second year	\$45,000	\$27,500

TOTAL EXPENDITURES

NET IMPACT (\$10,000) \$7,500

 x This rule is required by State law or Federal mandate.

Please identify the state or federal law: Senate File 261, 2008 Iowa Legislative session, requires the time of transfer inspection additions to the rules.

 x Funding has been provided for the rule change.

Please identify the amount provided and the funding source: The rules provide for certification fees for time of transfer inspectors. We expect to certify 100 inspectors in each of the first two years with the number of new inspectors diminishing in subsequent years. Renewal fees (\$300) will then be collected every other year.

 Funding has not been provided for the rule.

Please explain how the agency will pay for the rule change:

Fiscal impact to persons affected by the rule:

Homeowners selling their home with a septic system will be required to have that system inspected prior to recording the deed for transfer. An inspection is expected to cost approximately \$200 to \$500. If that system is found to be inadequate (i.e. illegal), it must be replaced. The average cost of a septic system is \$6500.

New construction rules require septic tank risers to the surface and effluent screens. This is expected to add approximately \$200 to the cost of a septic system.

Fiscal impact to Counties or other Local Governments (required by Iowa Code 25B.6):

Counties will be required to manage the records generated by time of transfer inspections. Counties can do the inspections if certified and charge a commensurate fee. If other certified individuals do the inspections, they are required to submit inspection reports to the county environmental health office. The additional work to manage these records will cost approximately \$2000 to \$10,000 annually depending upon the size of the county and the number of homes sold with septic systems.

* If additional explanation is needed, please attach extra pages.

Agency Representative preparing estimate: Daniel Olson, RS
Telephone Number: 515-281-8263



Time of Transfer Inspection Report (DNR Form 542-xxxx)

Property information

Current owner _____
Buyer _____ Realtor _____
Mailing address _____

Site Address/County _____

No. of bedrooms _____ Last occupied? _____ Disposal? Y / N Softener? Y / N H₂O supply? _____

Records available _____ Permit/installation date _____ Installer _____

Septic system information

Septic tank(s): size _____ material _____ condition _____
Tank pumped? _____ date _____ licensed pumper _____
Septic/trash/processing tank: size _____ material _____ condition _____
Tank pumped? _____ date _____ licensed pumper _____

Aerobic treatment unit (ATU) mfg _____ size _____
Tank pumped? _____ date _____ licensed pumper _____
Maintenance contract? _____ expiration date _____ service provider _____
Condition _____

Pump tanks/vaults: type _____ size _____ condition _____

Distribution system: distribution box _____ outlets used _____ condition _____
Header pipe(s) _____ # of lines _____
Pressure dosed? _____

Secondary treatment:

length of absorption fields _____ determined by _____
condition of fields _____ determined by _____
type of trench material _____

Size of sand filter _____ determined by _____
Vent pipes above grade? _____ discharge pipe located? _____
Effluent sample taken? _____ Results _____

Media filters: type _____
Maintenance contract? _____ expiration date _____ service provider _____
Condition _____

NPDES General Permit No. 4: required? _____ permitted? _____ NOI submitted _____



Time of Transfer Inspection Worksheet

Other components:

Alarms _____ Working? _____ disinfection _____ working? _____

Control box _____ Timers _____ inspection ports _____

Other components _____

Overall condition of the private sewage disposal system

Acceptable? _____ Unacceptable? _____

Explain (attach additional pages as needed): _____

Comments: _____

Site status at conclusion of Time of Transfer inspection:

- Verify that controls are set on the appropriate mode.
- Power is on to all components.
- Revisit all components to verify lids are secure.
- Gather all tools for removal from the site.
- Verify that no sewage is on the ground surface.

Using this worksheet, write a narrative report of the inspection results.

Submit a copy of this report, including your narrative, to the city/county environmental health office, the DNR and the county Recorder in the county where the inspection was conducted.

This report indicates the condition of the private sewage disposal system at the time of the inspection. It does not guarantee that it will continue to function satisfactorily.

Signature of Certified inspector: _____ Date: _____

Name (print): _____ Certificate #: _____

Address: _____

Phone # _____

Iowa Department of Natural Resources

National Pollutant Discharge Elimination System (NPDES)

**General Permit No. 4
For
Discharge from Private Sewage Disposal Systems**

**Effective Dates: [effective date] through [two years from
effective date]**

Table of Contents

Part I. Coverage Under This Permit.....	46
A. Permit Area.....	46
B. Eligibility.....	46
C. Requiring An Individual Permit.	46
D. Authorization.....	47
E. Reauthorization.....	47
Part II. Notice of Intent Requirements.....	47
A. Deadlines for Filing a Notice of Intent.....	47
B. Failure to Notify.....	48
C. Contents of the Notice of Intent.....	48
D. Where to Submit.....	48
Part III. Compliance Requirements	48
A. Compliance.....	48
B. Effluent Sampling by Qualified Samplers.....	48
C. Sampling Frequency and Testing Parameters.....	49
D. Effluent quality limits are as follows:.....	49
E. Sampling Location and Procedure:.....	49
F. Reporting of Sample Results and Repeat Sampling:.....	6
G. Duty to mitigate.....	6
H. Retention of Records	50
Part IV. Standard Permit Conditions.	50
A. Duty to Comply.....	50
B. Duty to Provide Information.....	50
C. Signatory Requirements.	50
D. Severability.....	7
E. Permit Actions:.....	51
F. Legal and Financial Liability Waiver:.....	51
G. Transfer of coverage under this permit:.....	51
H. Notice of Discontinuation:.....	51
I. Proper Operation and Maintenance	8
Part V. Reopener Clause.....	8
Part VI. Definitions.....	8

Part I. Coverage Under This Permit

A. Permit Area.

This permit covers all the areas of the State of Iowa.

B. Eligibility.

1. This permit covers the discharge from any Private Sewage Disposal System which discharges to a designated surface water of the state and is constructed in accordance with 567 IAC Chapter 69.
2. Limitations on Coverage. This permit does not cover the following types of discharges:
 - 1) Discharge from any system which does not meet the minimum construction standards described in 567 IAC Chapter 69.
 - 2) Any non-domestic wastewater discharge such as a car wash, autobody shop, or any other source of industrial wastewater.
 - 3) Any private sewage disposal system with a currently effective individual NPDES permit.
3. Exclusions. The following private sewage disposal systems' discharges do not require an NPDES permit:
 - 1) Private sewage disposal systems which discharge to the surface of the ground where the effluent will not reach a designated water of the state.
 - 2) Private sewage disposal systems that discharge to the subsurface. Such systems include soil absorption trenches, mound systems, drip irrigation systems, or any other system with subsurface absorption.

C. Requiring An Individual Permit.

1. The department may require any person authorized to discharge under this permit to apply for and obtain an individual NPDES permit. The causes for such a request may include but are not limited to location of the discharge, amount of discharge, history of non-compliance with the general permit condition. When the Department notifies a discharger to apply for an individual permit, a deadline, not longer than one year, will be established for submitting the application. If a person fails to submit an individual NPDES permit application by the deadline established by the Department under this paragraph, his/her coverage under this general permit is automatically terminated at the end of the day specified for the application submittal.
2. Any person authorized to discharge by this permit may apply for an individual permit from the Department. The application for an individual permit shall include DNR Form 30 (542-3220) and all applicable fees and shall be submitted to the Department in accordance with 567 IAC 64.3(4)(a).
3. When an individual NPDES permit is issued to a discharger, the applicability of this general permit to the individual NPDES permit applicant is automatically terminated on the issuance date of the individual permit. When an individual NPDES permit is denied to a person for a discharge otherwise subject to this

general permit, the applicability of this general permit to the individual NPDES permit applicant is automatically terminated on the date of such denial, unless otherwise specified by the Department.

D. Authorization.

1. If the owner of a private sewage disposal system proposes to discharge from the disposal system to a designated water of the state, he/she must submit a complete Notice of Intent (NOI) in accordance with the requirements of Part II of this general permit to be authorized to discharge under this general permit.
2. Unless notified by the Department to the contrary, owners who have submitted complete NOIs are authorized to discharge effluent from a private sewage disposal system constructed in accordance with IAC 567 Chapter 69 and meet all the terms and conditions of this permit. Upon review of the NOI, the Department may deny coverage under this permit and require submittal of an application for an individual NPDES permit pursuant to Part I.C.1 of this general permit. If the Department determines that the discharge is eligible for coverage under this general permit, an authorization will be sent to the applicant.

E. Reauthorization.

1. The permit will be reauthorized and reissued prior to the expiration date of this permit.
2. Prior to the expiration of an authorization issued under this permit, the owner shall resubmit a NOI with the Department for coverage under the reissued general permit.
3. If this permit is not reissued prior to the expiration date, it will be administratively continued in accordance with 40 CFR 122.6 and IAC 567 64.8 and it will remain in force and effect for discharges that were covered prior to permit expiration date. If a system was granted permit coverage prior to the permit expiration date and the owner resubmitted NOI as specified above, the system will automatically remain covered by this permit until the earliest of:
 - 1) Authorization for coverage granted by the Department under a reissued or replacement of this general permit, following owner's timely submittal of a complete NOI requesting authorization to discharge under the new permit and compliance with the requirements of the new permit; or
 - 2) Owner's submittal of a Notice of Discontinuation; or
 - 3) Issuance of an individual permit for the system's discharge; or
 - 4) A formal decision by the Department not to require permit coverage for the discharge.

Part II. Notice of Intent Requirements

A. Deadlines for Filing a Notice of Intent.

1. The owner shall file a Notice of Intent (NOI) for coverage under this general permit with the Department when the construction permit is issued by the local administrative authority. A copy of the NOI must also be filed with the local administrative authority.
2. Owners of existing private sewage disposal systems constructed prior to the effective date of this general permit shall file a NOI by March 31, 2009.

B. Failure to Notify.

1. Owners who fail to notify the Department of their intent to be covered by this general permit, or who discharge pollutants to designated waters of the state without an NPDES permit, are in violation of the Clean Water Act and the Code of Iowa 455B.

C. Contents of the Notice of Intent.

1. A complete Notice of Intent shall include DNR Form 542-1541, signed in accordance with Part V.C of this permit. The information on the form shall include the following:
 - 1) The owner's name, address, and telephone number.
 - 2) The location of the private sewage disposal system. Location shall be provided as ¼, ¼, ¼ Section, Township, Range, and County in which the system discharges, or as the GPS coordinates and County.
 - 3) The type of secondary treatment system from which the discharge originates (i.e. sand filter, aerobic treatment unit, peat filter, textile filter, waste stabilization pond, constructed wetland).
 - 4) A certification that the information provided is accurate.
 - 5) A certification that the terms and conditions of the general permit will be met.
 - 6) Certification that the system will be constructed in conformance with the requirements of IAC 567 Chapter 69, if permit coverage is for a new or replacement private sewage disposal system.

D. Where to Submit.

1. The Notice of Intent must be filed with the Department at the following address (or as directed by the Department)

NPDES Section
Iowa Department of Natural Resources
502 E. 9th Street
Des Moines, IA 50319-0034
2. A copy of the completed NOI shall be submitted to the local administrative authority after applying for a construction permit for a private sewage disposal system.

Part III. Compliance Requirements

A. Compliance.

1. The system owner shall be responsible for assuring that compliance with all the permit terms and conditions is met.

B. Effluent Sampling by Qualified Samplers.

1. The owner is responsible to have the private sewage disposal system sampled to ensure compliance with this general permit. Only a "qualified sampler" shall conduct effluent sampling for compliance monitoring. "Qualified samplers" shall be one of the following:

- 1) A county or city environmental health staff person;
- 2) An Iowa-certified wastewater treatment operator; or
- 3) An individual who has received training approved by the Department to conduct effluent sampling.

C. Sampling Frequency and Testing Parameters.

All permitted discharging private sewage disposal systems shall be sampled and tested no less than twice a year at six-month intervals for Carbonaceous Biochemical Oxygen Demand (CBOD5) and Escherichia coli (E. coli), and once a year for total suspended solids (TSS).

D. Effluent quality limits are as follows:

Effluents Discharging To	E. coli cfu/100 mL	CBOD5 mg/L	TSS mg/L
Class "A1", "A3" waters	235	25	25
Class "A2" waters	2880	25	25
All other water use classifications	no limit	25	25

E. Sampling Location and Procedure:

1. Effluent samples must be collected from an approved sampling port or from the end of the discharge pipe (if accessible) following the final treatment component of the system. If the system is not discharging at time of sampling, but appears to have been discharging, water must be added to the system through the building plumbing to create a discharge. If there is no evidence of a discharge from the system within the previous six months, only a physical inspection of the discharge area for any signs of surfacing effluent is required. If no sample was collected, a brief inspection report must be submitted to the local administrative authority and to the Department explaining why no sample was collected.
2. Effluent samples must be analyzed by a laboratory certified by the Department. A list of certified laboratories is available from the Department or the local administrative authority. Sample containers provided by the laboratory must be used for the sample. The sample must be collected from a free falling effluent pipe or sampling port where the effluent is flowing. Samples shall not be taken from a pooled location. Samples must be cooled to 4 degrees C (38 degrees F) immediately after collection and be maintained at this temperature during transport to the laboratory. (Packing the sample in ice is satisfactory). The sampler must ensure that the laboratory receives samples within one day (24 hours) of collection.

F. Reporting of Sample Results and Repeat Sampling:

1. The owner must submit all required sample test results to the Department and to the local administrative authority. All required sample test results must also be sent to the maintenance contractor, if applicable.

G. Duty to mitigate

1. If a sample does not meet the effluent limits, the owner must investigate the potential causes of the problem, and a repeat sample must be taken within 30 days for the specific parameter that was out of

compliance. If three consecutive samples do not meet the effluent limits, the owner must take corrective actions to bring the system into compliance.

H. Retention of Records

1. The owner shall retain records of all monitoring information required by this permit for a period of three years.
2. The records of monitoring information shall include:
 - 1) The date, exact place, and time of sampling or measurement;
 - 2) The name of the individual who performed the sampling or measurement;
 - 3) The date analyses were performed;
 - 4) The name of the laboratory that performed the analyses; and,
 - 5) The results of the analyses.

Part IV. Standard Permit Conditions.

A. Duty to Comply.

1. The owner of a private sewage disposal system that discharges to a designated water of state must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the Code of Iowa and the Clean Water Act and is grounds for enforcement action, termination of coverage under this general permit, or for denial of a request for coverage under a reissued general permit.

B. Duty to Provide Information.

1. The owner shall furnish to the Department or to the local administrative authority any information relative to the construction, operation or maintenance of this facility, including effluent sample test results, within the time period specified by the Department.

C. Signatory Requirements.

1. Notices of Intent for this permit shall be signed by the owner of the system.
2. If the owner is not an individual, the person signing the NOI shall be as follows:
 - 1) Corporations. In the case of corporations, a principal executive officer of at least the level of vice-president.
 - 2) Partnerships. In the case of a partnership, a general partner.
 - 3) Sole proprietorships. In the case of a sole proprietorship, the proprietor.

D. Severability.

1. If any provision or application of any provision to any circumstances is found to be invalid by this Department or by a court of law, all other provisions and conditions shall remain effective.

E. Permit Actions:

1. Coverage under this general permit may be terminated for cause. The filing of a request by the owner for a permit discontinuance, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

F. Legal and Financial Liability Waiver:

1. *No legal or financial responsibility arising from the operation or maintenance of any disposal system or part thereof installed by the permittee to achieve compliance with this permit shall attach to the State of Iowa or the Iowa Department of Natural Resources.*

G. Transfer of coverage under this permit:

1. For discharges covered under this general permit, when the property with a private sewage system changes ownership, the Department must be notified of the title transfer prior to the new owner taking possession of the property. After the Department is thus notified, the new owner(s) shall be subject to all terms and conditions of this general permit from and after the date the Department receives written notice of transfer of responsibility.

H. Notice of Discontinuation:

1. If a private sewage disposal system is modified to a system that does not discharge to a designated water of the state, the owner of the system shall submit a Notice of Discontinuation to the Department.
2. The Notice of Discontinuation shall include the following information:
 - 1) the name of the owner to which the permit authorization was issued;
 - 2) the general permit authorization number;
 - 3) the date the discharge is discontinued; and,
 - 4) the following certification signed in accordance with Part IV.C.2 of this permit:

"I certify under penalty of law that discharge from the above private sewage system is discontinued. I understand that by submitting this Notice of Discontinuation, I am no longer authorized to discharge from my private sewage disposal system by Iowa Department of Natural Resources NPDES General Permit No. 4 and that discharging pollutants from my private sewage disposal system to designated waters of the state is unlawful under the Clean Water Act and Code of Iowa.

"

Part V. Reopener Clause

1. If there is evidence indicating potential or realized impacts to water quality due to any discharge from an authorized private sewage disposal system covered by this general permit, the owner of such system may be required to obtain individual permit in accordance with Part I.C of this general permit.

Part VI. Definitions.

"Administrative Authority" means the local (county or city) or regional Board of Health authorized under Code of Iowa 455B.172 to regulate private sewage disposal systems and the Department.

"Carbonaceous Biochemical Oxygen Demand (CBOD5)" means a five-day measurement of the amount of oxygen used by microorganisms in the biochemical oxidation of organic matter.

"Class 'A1' water," also referred to as a primary contact recreational use water, means waters in which recreational or other uses may result in prolonged and direct contact with the water, involving considerable risk of ingesting water in quantities sufficient to pose a health hazard. Such activities would include, but not be limited to, swimming, diving, water skiing, and water contact recreational canoeing.

"Class 'A2' water," also referred to as a secondary contact recreational use water, means waters in which recreational or other uses may result in contact with the water that is either incidental or accidental. Such uses include fishing, commercial and recreational boating, any limited contact incidental to shoreline activities and activities in which users do not swim or float in the water body while on a boating activity.

"Class 'A3' water," also referred to as a children's recreational use water, means waters in which recreational uses by children are common. Such waters are water bodies having definite banks and bed with visible evidence of the flow or occurrence of water. This type of use would primarily occur in urban or residential areas.

"Department" means the Department of Natural Resources of the State of Iowa.

"Private sewage disposal system" means a system which provides for the treatment or disposal of domestic sewage from four or fewer dwelling units or the equivalent of less than sixteen individuals on a continuing basis.

"Qualified sampler" means one of the following persons, for the purposes of collecting compliance effluent samples required under NPDES General Discharge Permit No. 4: a county or city environmental health staff person, an Iowa-certified wastewater treatment operator, or an individual who has received training approved by the Department to conduct effluent sampling.

General Permit #4 Rationale

Date: 9/17/2008

Written by: Daniel Olson, R.S.

Coverage: All discharging private sewage disposal systems in Iowa

Type of systems covered: Predominantly buried sand filters (~80%), aerobic treatment units (~6%), free access sand filters (~5%), peat filters (~3%), textile filters, lagoons and wetlands (all<2%).

Discharge points: The majority of systems discharge to the ground surface in a homeowner's backyard or to a road or drainage ditch. A smaller percentage discharge directly or close enough to a waterway to be considered to be discharging to a stream.

System performance: The following is a collection of data from US EPA "Onsite Wastewater Treatment Systems Manual" Tables 3-19, representing studies on the treatment performance of various onsite treatment technologies.

Type of system	CBOD ₅ (mg/L)	TSS (mg/L)	TN (mg N/L)	Fecal Coliforms (cfu/100mL)
Buried Sand filter	8	12.5	30	10 ²
Aerobic treatment unit*	27.5	52.5	42.5	10 ⁴
Textile filters	10	7.5	45	10 ²

*Aerobic treatment units (ATU) in Iowa require a tertiary sand filter

Source: Siegrist, 2001

This information is consistent with test results in Iowa. The best available information is on sand filters since they are the predominant type of system and have been used for 30+ years.

Typical results for sand filters in Iowa

CBOD₅: <10mg/L

TSS: <15mg/L

E. coli: <2000 cfu/100mL

Systems that discharge to Class A waterways may require disinfection. This is typically done with UV lights. These results met the current limits for CBOD₅ (25mg/L) and TSS (25mg/L) consistently for approximately 88% of the discharging systems in Iowa. The current requirement for E. coli is 235cfu/100ml for systems one mile up gradient of a Class A or C water. Systems not within this area do not have a limit for E. coli. Insufficient data is available on the other 12% of systems to make a scientifically accurate estimate of these parameters. Nationally, other discharging systems have performed satisfactorily with proper maintenance.

Presently ATU's, textile and peat filters require regular maintenance, ATU's in rule and textile and peat filters through manufacturers requirements. Regular maintenance is important to achieve proper effluent results.

New Limits:

Effluents Discharging To	E. coli cfu/100 mL	CBOD5 mg/L	TSS mg/L
Class “A1”, “A3” waters	235	25	25
Class “A2” waters	2880	25	25
All other water use classifications	no limit	25	25

Basis for limits:

The new proposed requirements will include permitting those systems that discharge to designated waters of the state. The CBOD5 and TSS limits remain unchanged. The E. coli limit for Class “A2” waterways reflects the limit for public systems in IAC567-61.3(3).

Given that the majority of discharging onsite systems do not directly discharge to waterways, further treatment can be expected as the effluent soaks into the ground. Evaporation can also be significant. With the historically excellent performance of discharging systems in Iowa (particularly sand filters), adequate operation and maintenance can provide a better benefit than effluent sampling. The new permit language requires that only those systems that discharge to, or can reasonably be assumed to enter; designated waters of the state will need to apply for General Permit #4. These systems may impact waters of the state and particularly designated waters. The effluent testing for these systems will be increased in frequency to twice a year. The limits above will apply. The number of permits issued will be more manageable with increased ability by the Department to monitor these systems.

Systems that do not discharge to designated waters of the state will require annual operation and maintenance inspections but no General Permit #4 or effluent testing. They will however be permitted by rule. This means they must operate and maintain their system according to procedures outlined by the Department. Buried sand filters will require an annual inspection by a knowledgeable person including a tank and effluent pipe inspection and inspection of the treatment area. A knowledgeable person can be the homeowner but they must be trained. More complex systems such as ATU’s, textile and peat filters will require annual or semi-annual operation and maintenance inspections by a manufacturer or state trained service provider. These inspections may include effluent sampling if required by the manufacturer. Inspection records must be kept by the owner and produced upon demand for sand filters. Aerobic treatment units, textile and peat filters require maintenance contracts and inspection reports must be submitted to the administrative authority. Lagoons have been removed from the rules as alternatives for residences. Free access sand filters may only be used following an ATU.

The most important aspect of designing an onsite wastewater treatment system is ensuring aerobic conditions in the secondary treatment system. Code requirements

require an unsaturated zone for soil systems and venting for sand, peat and textile filters. This ensures an adequate supply of oxygen for aerobic bacteria to treat the wastewater properly. This presence of oxygen also ensures nitrification of ammonia to nitrate and /or nitrite. The discharging systems utilized in Iowa all provide significant reduction of ammonia to nitrate. A study of peat filters done in Australia is illustrative of the performance of media filters. In that study the mean average concentration of ammonium-nitrogen was 3.16mg/L. A study conducted by the National University of Ireland showed a 99% reduction in ammonia in sand filters and a similar study of constructed wetlands done at the University of Akron showed a level of 1.5mg/L ammonia for that effluent. For these reasons an ammonia limit is not included in this permit.

Metal concentrations were also considered as part of the review of the General Permit #4. Users of onsite wastewater systems are advised about the things that should and should not be put into the system. Household chemicals are the likely source of any metals that may enter an onsite system. Case studies on metals in onsite systems are minimal. Studies that have been done have found low levels of metals in septic tank effluent. Typically these constituents are measured in micrograms per liter. The majority of these are well below the EPA action levels for these constituents. These measurements were done on septic tank effluent prior to treatment in the media filter. The media filter can be expected to reduce the metal concentrations further by adsorption to the media particles and cation exchange. Removal of sources of metals from the wastewater stream by altering user habits and implementing alternative disposal practices is the recommended course of action by EPA.